CONSTRUCTION NEWS

PERSONALS, ENGINEERING SOCIETIES, INDUSTRIAL NOTES, TRADE PUBLICATIONS.

Supplement to ENGINEERING NEWS. Thursday, April 9, 1903.

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PERSONAL.

Mr. Charles G. Roberts has been appointed to the Board of Water Commissioners of Chelsea, Mass.

Mr. Thatcher T. P. Luquer, Consulting Engineer, has removed his office to 5 West 31st St., New York.

Mr. C. E. Dearborn has been appointed Chief Engineer of the Iowa & St. Louis R. R., now under construction.

Mr. John M. Mack has resigned as one of the receivers of the Asphalt Co. of America and the National Asphalt Co.

Mr. Percy S. Davis, a director of the Davis Calyx Drill Co., has returned from a prolonged business trip in Australia.

Mr. C. S. Carrigan has been appointed Resident Engineer of the Southern Pacific Ry., with headquarters at San Antonio, Tex.

Mr. Harry A. Norton, associated with A. O. Norton, manufacturer of screw and track jacks, of Boston, Mass., sailed for Russia on April 7.

Mr. Thomas Merry, Chief Engineer of the Toronto Ry. Co., Toronto, Ont., has resigned to accept an appointment with Mackenzie & Maim in the Northwest.

Mr. T. H. Crosswell has been appointed Division Engineer of the Northern Pacific R. R., with headquarters at Tacoma, Wash., succeeding Mr. G. A. Kyle, resigned.

Mr. L. C. Kelsey, City Engineer of Salt Lake City, Utah, has left for the East on a 30-days' trip, during which time he will examine municipal improvements in all the large Eastern cities.

Mr. Hugh E. Crilby has been appointed Receiver of the Mauch Chunk, Lehighton & Slatington St. Ry. Co., which company operates an electric line between Mauch Chunk and Lehighton, Pa.

Mr. K. C. Weedin has been appointed Resident Engineer of the Middle, Eastern and River Divisions of the New York Central & Hudson River R. R., succeeding Mr. L. W. Tucker, resigned.

Mr. George F. Wilson, formerly Superintendent of Motive Power of the Chicago, Rock Island & Pacific Ry., has been appointed Purchasing Agent of the Delaware, Lackawanna & Western Ry.

Mr. John T. Dickerson has resigned his position in the Bridge Department of the Chicago, Burlington & Quincy R. R., to accept a position in the Bridge Department of the Chicago, Rock Island & Pacific Ry.

Messrs. E. P. Roberts & Co., of Cleveland, O., electrical engineers and railroad builders, will open an office in New York city in charge of Mr. W. C. Andrews, formerly of the staff of the "Street Railway Journal."

Mr. T. M. Downing has been appointed Master Mechanic of the St. Louis, Memphis & Southeastern R. R. and the St. Louis & Gulf Ry., with headquarters at Cape Girardeau, Mo., succeeding Mr. W. B. Warren, resigned.

Mr. A. L. Studer, Assistant Superintendent of Motive Power of the Chicago, Rock Island & Pacific R. R., has resigned to become Superintendent of Motive Power of the Colorado & Southern Ry., with headquarters at Denver, Colo.

Mr. J. G. Myers has been appointed Superintendent of Motive Power and Car Department of the Nevada-California-Oregon and Sierra Valley railways, with headquarters at Reno, Nev., succeeding Mr. G. W. Tompkins, resigned.

Mr. Arnold C. Koenig, Assoc. M. Am. Soc. C. E., and M. Am. W.-W. Assn., has been appointed Water Commissioner and Secretary of the new Omaha Water Board, which was recently appointed by the Governor of Nebraska, providing for the acquisition of the Omaha Water-Works by the city.

Mr. William Foster, who has been Assistant Civil Engineer of the interurban railway lines of Springfield, O., controlled by the Appleyard interests, has resigned to accept a position with the Union Traction Co., with headquarters at Noblesville, Ind.

Mr. Frank Parker has resigned as City Engineer of Ogden, Utah, owing to the lack of sufficient compensation for his increased duties. It is likely that Mr. Parker will be reappointed under a different arrangement by which he can receive better remuneration.

Mr. I. G. Rawn, General Superintendent of the Baltimore & Ohio R. R., at Pittsburg, and formerly General Superintendent of the Baltimore & Ohio Southwestern Ry., has been appointed Assistant to the Second Vice-President of the Illinois Central R. R.

Mr. F. M. Graham, Assistant Engineer of the Northwest system of the Pennsylvania Lines, at Fort Wayne, Ind., has been appointed Engineer of Maintenance-of-Way of the Cincinnati & Muskegon Valley Ry., at Zanesville, O., succeeding Mr. F. Rhea, transferred to Logansport, Ind.

Messrs. F. Ree, G. Calthorp, H. Goulbourn, A. R. Trevithick, E. B. Thornhill, F. Dent and R. Evans, of the London & Northwestern R. R. of England, who have been traveling over the United States for several months making a study of American industrial and railroad conditions, sailed for home last week.

Lt.-Col. James B. Quinn, Corps of Engineers, U. S. A., stationed at Norfolk, Va., has been assigned to the work south of Norfolk, which was formerly under Gen. Hains. The river and harbor improvemnts and fortifications at Baltimore and vicinity will be placed under charge of Lt.-Col. Chas. J. Allen.

Col. Amos Stickney, Corps of Engineers, U. S. A., has been assigned to relieve Brig.-Gen. Peter C. Hains, Corps of Engineers, on the Lighthouse Board, and is given charge of the Eastern Division of Fortifications and River and Harbor Works, which division has been extended so as to include Philadelphia, Baltimore and Washington.

Col. John A. Dodson, formerly Assistant to the General Manager of the Southern Ry., has been appointed Superintendent of Construction in charge of double tracking and new work. Mr. W. A. Vaughan, formerly Superintendent of the Atlanta Division, is appointed Assistant General Superintendent of the Western District. Mr. W. N. Foreacre, Superintendent of Mobile Division, is appointed Superintendent Atlanta Division, and is succeeded by Mr. J. J. Cotter.

Mr. George F. Morse, Assistant Engineer Lehigh Valley R. R., at Buffalo, N. Y., has resigned, to take effect May 1. Mr. Morse entered the service of the L. V. R. R. in November, 1887, at Jersey City, N. J. He was employed on the construction of the tidewater terminals and the main line east of Roselle, N. J. In December, 1898, he was transferred to South Bethlehem, Pa., as Office Assistant Engineer to the Engineer of Maintenance-of-Way. In February, 1900, he was transferred to Buffalo, N. Y., as Assistant Engineer in the Chief Engineer's Department.

The sub-committee appointed by the Isthmian Canal Commission for the purpose of inspecting the route of the proposed Panama Canal with a view of completing the preparations for the transfer of the canal property to the United States, composed of Rear-Admiral John G. Walker, U. S. N., Brig.-Gen. Peter C. Hains, Corps of Engineers, U. S. A., and Prof. William H. Burr., head of the Department of Civil Engineering, Columbia University, will leave New York on April 9 for Colon, Colombia, and will remain on the Isthmus for several months. They will be accompanied by Major William M. Black, Corps of Engineers, U. S. A., who will be relieved of the command of the post at Washington Barracks to serve under the commission in connection with the purely engineering work of the canal project. Major Black, who is an expert in sanitary engineering, will devise plans for the improvement of the sanitary conditions of the canal route. With the exception of Rear-Admiral Walker, all are members of the American Society of Civil Engineers.

OBITUARY.

Mr. Sidney V. Rowland, Superintendent of the Pittsburg Coal Mining Co., died late last week at Danville, Ky.

Mr. James A. Stewart, General Superintendent of the Utica & Mohawk Valley R. R., died last week in Fonda, N. Y., aged 40 years.

Mr. Samuel Otis Dimmick, the first President of the Port Jervis, Monticello & New York R. R., died at his home in Port Jervis, N. Y., on April 6, aged 79 years. Mr. Dimmick took an active part in the construction of the P. J., M. & N. Y. R. R., and was a director of the company until it went into the hands of the receiver.

Mr. Lyman T. Lawton, formerly President of the Automatic Lighting Co. and the Connecticut Telephone & Electric Co., died at Meriden, Conn., late last week, aged 55 years.

Mr. Jacob Rudolphy, Surveyor, died at his home in New York city on April 5, aged 77 years. He was born in Germany and was graduated from the Darmstadt Polytechnic Academy in that country. Mr. Rudolphy came to New York in 1850 and began work as a surveyor and engineer.

Mr. W. W. Card, Second Vice-President of the Westinghouse Air Brake Co., died in Pittsburg, Pa., on April 4, from injuries received in being struck by a trolley car. Mr. Card was born in 1831, and was educated as a civil engineer, which profession he followed in the employ of the Cleveland, Lorain & Wheeling and P., C., C. & St. L. roads. In 1870 he went to the Westinghouse Air Brake Co.

Mr. B. F. Marsh, former civil engineer, died at Helena, Mont., on April 2, aged 88 years. Mr. Marsh was born in Vermont and was graduated at Norwich University as a civil engineer. In 1837 he went to Georgia and surveyed for the Southern Ry. He was in the South at the outbreak of the Civil War and was held there to prevent the Northerners from having the benefit of his services. After the war he was made Professor of Mathematics in Soule University, and in 1867 went to Montana to work with U. S. Surveyor Meredith. He laid out several important railway projects in various states. Since 1889 he had lived in retirement.

ENGINEERING SOCIETIES.

COMING MEETINGS.

AMERICAN ELECTROCHEMICAL SOCIETY.
April 16, 17, 18. Annual meeting at New York city. Secy., C. J. Reed, 929 Chestnut St., Philadelphia, Pa.

NATIONAL MUNICIPAL LEAGUE.
April 22, 23, 24. Annual meeting at Detroit, Mich., and Ann Arbor, Mich. Secy., C. R. Woodruff, Philadelphia, Pa.

AIR BRAKE ASSOCIATION.
April 28. Annual convention at Colorado Springs, Colo. Secy., F. M. Nellis, 218 William St., New York city.

NATIONAL ELECTRIC LIGHT ASSOCIATION.
May 26, 27 and 28. Convention at Chicago, Ill. Secy., James B. Cahoon, 136 Liberty St., New York city.

AMERICAN SOCIETY OF CIVIL ENGINEERS.
June 8. Annual convention at Asheville, N. C. Secy., C. W. Hunt, 220 W. 57th St., New York.

AMERICAN FOUNDRYMEN'S ASSOCIATION.
June 9, 10, 11. Annual convention at Milwaukee, Wis. Secy., Richard Moldenke, P. O. Box 432, New York city.

INTERNATIONAL ASSOCIATION OF CAR ACCOUNTANTS AND CAR SERVICE OFFICERS.
June 17, 18. Annual meeting at Quebec, Canada. Secy., L. G. Corcoran, Buffalo, N. Y.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
June 22 to 26. Annual meeting at Saratoga, N. Y. Secy., Prof. F. R. Hutton, 12 West 31st St., New York city.

AMERICAN WATER-WORKS ASSOCIATION.
June 23 to 26. Annual meeting at Detroit, Mich. Secy., J. M. Diven, Elmira, N. Y.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.
June 29, July 2. Annual convention at Niagara Falls, N. Y. Secy., R. W. Pope, 95 Liberty St., New York.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.
July 1, 2, 3. Annual convention at Niagara Falls, N. Y. Secy., C. A. Waldo, Purdue University, Lafayette, Ind.

AMERICAN PARK AND OUTDOOR ART ASSOCIATION.
July 7, 8, 9. Annual meeting at Buffalo, N. Y. Secy., C. M. Robinson, Rochester, N. Y.

AMERICAN STREET RAILWAY ASSOCIATION.
Sept. 2 to 4. Annual convention at Saratoga Springs, N. Y. Secy., T. C. Penington, 2020 State St., Chicago, Ill.

NATIONAL MUNICIPAL LEAGUE.—The ninth annual meeting of the league will be held at Detroit and Ann Arbor, Mich., on April 22, 23 and 24, as a national conference for good city government. Headquarters will be at Hotel Cadillac, Detroit. The police problem, city elections, boodling, "reform" campaigns, etc., are among the subjects to be discussed. An entire session will be devoted to Municipal Accounting, as at previous meetings. Secy., C. R. Woodruff, Philadelphia, Pa.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.—The following nominations for officers for the coming year have been made: For President, Mr. Bion J. Arnold, of Chicago; for Vice-Presidents, Messrs. Calvin W. Rice, of New York, W. S. Barstow, of New York, and Ralph D. Mershon, of New York; for Secretary, Mr. Ralph W. Pope; for Treasurer, Mr. George A. Hamilton; for Managers, Messrs. Samuel Sheldon, of New York, W. C. L. Eglin, of Philadelphia, George F. Sever, of New York, and A. H. Armstrong, of Schenectady.

WESTERN SOCIETY OF ENGINEERS.—At the regular meeting held in the rooms of the society in Chicago on April 1, Prof. C. S. Slichter, of the University of Wisconsin, presented an interesting paper on "The Measurement of Underflow Streams in Southern California." The method used was to sink a series of wells, making electrical attachments between the well casings and a recording apparatus, and then to charge the upstream well with salt, or any other electrolyte, and observe its appearance at the other wells by the sharp drop in electrical resistance as the salt reached them.

MUNICIPAL ENGINEERS OF THE CITY OF NEW YORK.—The meeting for organization, announced in advance in our last issue, was held on April 3. Temporary officers were elected, to hold office until permanent officers could be chosen. A constitution was adopted and a nominating committee of fifteen, representing all departments and boroughs, was selected. The society will hold its next meeting on April 22, when officers will be elected and a paper presented. The temporary secretary of the society is Mr. A. S. Tuttle. About 100 have already enrolled.

AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION.—The Board of Direction announces that it has decided to continue the publication of the monthly bulletins, and desires to call the attention of the members to the great value and desirability of written discussions of the reports and papers submitted at the last annual convention. Written discussions will be received up to May 1, 1903, and will be referred to the proper committees to afford them opportunity to reply thereto. The discussions and replies will be published in the bulletins and reprinted in the annual proceedings. Hunter McDonald, Pres. E. H. Fritch, Secy. pro tem, 1562 Monadnock Block, Chicago.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—At the meeting on April 1, Mr. Geo. W. Fuller, Assoc. M. Am. Soc. C. E., presented a paper on "Filtration Works of the East Jersey Water Co., at Little Falls, N. J." This mechanical filter plant, with a nominal daily capacity of 32,000,000 gallons, was described at length in Engineering News of May 9, 1901, just prior to the time it was put under construction. Concrete steel construction was used throughout, including the walls of the deep coagulating basin and clear water reservoirs, the filter tanks, and the floors and beams of the plant. The filter units are rectangular tanks, 15 × 24 ft. in plan and 8 ft. deep, each having a nominal capacity of 1,000,000 gallons. Air, instead of mechanical agitators, is used in connection with a reversed flow of water for washing the filters. An operating table is provided for each filter by means of which the attendant need only move levers to open or close the hydraulic valves controlling the water supply, and press buttons to start or stop the air and water pumps for washing the filters. The paper contained many figures relating to the operation of the plant, to which we hope to refer in a later issue.

The discussion was participated in by a number of members, most of whom expressed their appreciation of the plant and some of whom commended the careful detailed records of operation that are being kept. Mr. Allen Hazen said that most mechanical filter plants heretofore built have failed at times because of defects in the appliances for admitting and regulating the coagulant. Precautions against this had been taken at Little Falls. Mr. Rudolph Hering said that the plant in question marked a change from small to large units for mechanical filtration, and from a commercial to an engineering basis. Mr. Robert Spurr Weston thought it questionable whether air or, in fact, any means of agitation, other than the wash water, is necessary for all waters. The foreign matter in the water at Little Falls seems to be fibrous; at some other places it is crystalline. He did not think good filter sand could be obtained for much less than $10 a ton. Mr. Wm. B. Fuller, Resident Engineer on the construction of the filter, reviewed some points regarding the concrete and concrete-steel work. He said that the 1 : 1½ : 3 concrete lining to the deep tanks was difficult to place, and that it was more porous than the 1 : 3 : 7 concrete of the main wall.

CONSTRUCTION NEWS.

CONDENSED LIST OF CONTRACTS PENDING WITH DATE OF OPENING BIDS

Bids to be opened	Work.	Place.	See Eng. News.
Apr. 9.	Machinery,	Cleveland, O.	Apr. 2
Apr. 9.	Paving,	New York, N. Y.	Apr. 2
Apr. 9.	Comfort station,	New York, N. Y.	Apr. 2
Apr. 9.	Light plant,	New York, N. Y.	Apr. 2
Apr. 9.	Mechanical stokers,	Cleveland, O.	Apr. 2
Apr. 9.	Masonry pedestals,	New York, N. Y.	Apr. 2
Apr. 9.	Stand-pipe,	Dyersburg, Tenn.	Mar. 26
Apr. 9.	Sewers,	Bridgeport, Conn.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 9.	Laying water pipe,	Boston, Mass.	Mar. 26
	Advertised, Engineering News, Mar. 12.		
Apr. 9.	Dredging,	Mobile, Ala.	Mar. 12
	Advertised, Eng. News, Mar. 12 to Apr. 9.		
Apr. 10.	Water main,	New London, Conn.	Mar. 19
Apr. 10.	Water supply,	Port Townsend, Wash.	Mar. 26
Apr. 10.	Sewer,	Maywood, Ill.	Apr. 2
Apr. 10.	Laying water pipe,	Falmouth, Mass.	Apr. 2
Apr. 10.	Bridge,	Salem, Mass.	Apr. 2
Apr. 10.	Dredging,	Washington, D. C.	Apr. 2
Apr. 10.	Reservoir,	Lewiston, Idaho	Apr. 9
Apr. 11.	Bridges (3),	Bay City, Mich.	Apr. 9
Apr. 11.	Viaduct,	Buffalo, N. Y.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
Apr. 11.	Bridge,	Akron, O.	Apr. 2
Apr. 11.	Paving and sewers,	Youngstown, O.	Mar. 26
Apr. 11.	Bridges,	Wichita, Kan.	Mar. 26
Apr. 11.	Breakwater,	Petoskey, Mich.	Mar. 19
	Advertised, Eng. News, Mar. 19 to April 9.		
Apr. 11.	Portland cement,	Marquette, Mich.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 11.	Canal work,	Chattanooga, Tenn.	Mar. 5
	Advertised, Eng. News, Mar. 5 to Apr. 2.		
Apr. 13.	Bridges, (13),	Williamsport, Ind.	Mar. 26
Apr. 13.	Bridges (2),	San Bernardino, Cal.	Mar. 26
Apr. 13.	Paving,	Toledo, O.	Mar. 19
Apr. 13.	Paving,	Cincinnati, O.	Apr. 2
Apr. 13.	Paving,	Houston, Tex.	Apr. 2
Apr. 13.	Paving,	Des Moines, Ia.	Apr. 2
Apr. 13.	Wharf,	Portland, Ore.	Apr. 2
Apr. 13.	Electric light plant,	Columbus, O.	Apr. 2
Apr. 13.	Electric wiring, sanitary work,	New York	Apr. 9
Apr. 13.	Paving,	Cincinnati O.	Apr. 9
Apr. 13.	Building,	Alexandria, Ind.	Apr. 9
Apr. 13.	Sewers,	Fargo, N. Dak.	Apr. 9
Apr. 13.	Paving,	Oil City, Pa.	Apr. 9
Apr. 13.	Paving,	Worcester, Mass.	Apr. 9
Apr. 14.	Paving,	New York, N. Y.	Apr. 9
Apr. 14.	Fire-alarm system, etc.,	New York, N.Y.	Apr. 9
Apr. 14.	Water-works,	Agricultural College, Mich.	Apr. 9
	Advertised, Engineering News, Apr. 9.		
Apr. 14.	Paving,	New York, N. Y.	Apr. 9
Apr. 14.	Building,	Merced, Cal.	Apr. 2
Apr. 14.	Riprap stone,	Washington, D. C.	Apr. 2
Apr. 14.	Water tower,	Marshall, Tex.	Apr. 2
Apr. 14.	Riprap stone,	Virginia.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 14.	Railway (Deepwater Ry),	Beckley, W. Va.	Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 14.	Bridge work,	Columbus, O.	Mar. 19
Apr. 14.	Dredging,	Camden Harbor, Me.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 14.	Sewers,	Columbus, O..	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 9.		
Apr. 14.	Bridges,	Boston, Mass.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 14.	Paving,	Massillon, O.	Apr. 9
Apr. 14.	Building,	Windsor, N. S.	Apr. 9
Apr. 14.	Paving,	Terre Haute, Ind.	Apr. 9
Apr. 14.	Building,	Moundsville, W. Va.	Apr. 9
Apr. 15.	Building,	Baton Rouge, La.	Apr. 9
Apr. 15.	Building,	Beverly, Mass.	Apr. 9
Apr. 15.	Building,	Peabody, Mass.	Apr. 9
Apr. 15.	Building,	Corsicana, Tex.	Mar. 26
Apr. 15.	Building,	New Bedford, Mass.	Mar. 26
Apr. 15.	Dredging,	Norfolk, Va.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 9.		
Apr. 15.	Laying water pipe,, etc.,	Enfield, N. H.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 15.	Electric plant,	Liverpool, N. S.	Mar. 26
Apr. 15.	Dredging,	New York, N. Y.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 15.	Building materials,	Pineridge, S. Dak.	Mar. 19
Apr. 15.	Paving materials,	Traverse City, Mich.	Apr. 2
Apr. 15.	Building,	Union, S. C.	Apr. 2
Apr. 15.	Sewers,	Amsterdam, N. Y.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
Apr. 15.	City engineer's position,	Stratford, Ont.	Apr. 2
Apr. 15.	Sprinkling carts (2),	La Crosse, Wis.	Apr. 2
Apr. 15.	Floating baths,	Brooklyn, N. Y.	Apr. 2
Apr. 15.	Building,	Olney, Ill.	Apr. 2
Apr. 15.	Bridge,	Cumberland, Md.	Apr. 9
Apr. 15.	Smokestack,	Kansas City, Mo.	Apr. 9
	Advertised, Engineering News, Apr. 9.		
Apr. 15.	Pipe lines	Kansas City, Mo.	Apr. 9
	Advertised, Engineering News, Apr. 9.		
Apr. 15.	Laying water pipe,	Toronto, Ont.	Apr. 9
Apr. 15.	Artesian well,	Smithville, Ga.	Apr. 9
Apr. 15.	Sewers,	Brooklyn, N. Y.	Apr. 9
Apr. 16.	Steam heating plant,	Washington, D. C.	Apr. 9
Apr. 16.	Bridge,	New York, N. Y.	Apr. 9
Apr. 16.	Boilers,	Washington, D. C.	Apr. 9
Apr. 16.	Street lighting,	Bozeman, Mont.	Apr. 9
Apr. 16.	Paving,	Williamsport, Pa.	Apr. 9
Apr. 16.	Paving,	Long Island City, N. Y.	Apr. 9
Apr. 16.	Building,	Dennison, O.	Apr. 2
Apr. 16.	Sidewalks,	Fort Washington, Md.	Apr. 2
Apr. 16.	Bridge plans,	Saginaw, Mich.	Apr. 2
	Advertised, Eng. News, Apr. 2 and 9.		
Apr. 16.	Bridges (6),	Indianapolis, Ind.	Apr. 2
Apr. 16.	Paving,	Williamsport, Pa.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 16.	Building,	Monroeville, Ala.	Mar. 26
Apr. 16.	Paving,	Houston, Tex.	Mar. 26
Apr. 16.	Water valves,	Cleveland, O.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 16.		
Apr. 16.	Bridge,	Aradarko, Okla. Ter.	Mar. 26
Apr. 17.	Dredge,	St. Augustine, Fla.	Feb. 19
	Advertised, Feb. 19, Mar. 5, 19, and Apr. 2.		
Apr. 17.	Building,	New York, N. Y.	Apr. 2
Apr. 17.	Wharf work,	Quebec, Que.	Apr. 2
Apr. 17.	Garbage collection,	New York, N. Y.	Apr. 9
Apr. 17.	Filling (Misc. Con.),	Cambridge, Mass.	Apr. 9
Apr. 18.	Electric transmission line,	Toronto, Ont.	Apr. 9
Apr. 18.	Gravel road,	Putnam, Conn.	Apr. 9
Apr. 18.	Bridge,	Cleveland, O.	Apr. 2
Apr. 18.	Paving,	Findlay, O.	Mar. 19
Apr. 18.	Paving,	Evansville, Ind.	Mar. 19
Apr. 18.	Building,	Luzerne, Pa.	Apr. 9
Apr. 18.	Building,	Springfield, Mass.	Apr. 9
Apr. 20.	Harbor improvements,	Jamaica	Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 20.	Dredging,	New York, N. Y.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 20.	Building,	Reedsburg, Pa.	Mar. 26
Apr. 20.	Dredging,	Boston, Mass.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 20.	Cement and broken stone,	Boston, Mass.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 20.	Bridges (3),	Zanesville, O.	Mar. 26
Apr. 20.	Artesian well,	Fort Ringgold, Tex.	Mar. 26
Apr. 20.	Paving,	Louisville, Ky.	Apr. 2
Apr. 22.	Locomotive,	Fort Monroe, Va.	Apr. 2
Apr. 20.	Water-works,	Oakland City, Ind.	Apr. 2
Apr. 20.	Paving,	Terre Haute, Ind.	Apr. 2
Apr. 20.	Drainage ditch,	St. Cloud, Minn.	Apr. 2
Apr. 20.	Roads,	Portland, Me.	Apr. 9
Apr. 20.	Building,	Cleveland, O.	Apr. 9
Apr. 20.	Building,	Warrington, Fla.	Apr. 9
Apr. 20.	Paving,	Cincinnati, O.	Apr. 9
Apr. 20.	Macadamizing,	Derry, N. H.	Apr. 9
Apr. 20.	Grading railway,	Cincinnati, O.	Apr. 9
Apr. 20.	Pumps, etc.,	Kansas City, Mo.	Apr. 9
	Advertised, Eng. News, Apr. 9 and 16.		
Apr. 20.	Buildings,	New York, N. Y.	Apr. 9
Apr. 20.	Gravel roads,	Washington, Ind.	Apr. 9
Apr. 21.	Building,	Great Bend, Kan.	Apr. 2
Apr. 21.	Paving,	Shawnee, O. T.	Apr. 2
Apr. 21.	Paving,	Nevada, Mo.	Apr. 2
Apr. 21.	Paving,	Cincinnati, O.	Apr. 2
Apr. 21.	Bridge,	Lincoln, Neb.	Apr. 2
Apr. 21.	Sewage pumping plant,	Calcutta, India	Mar. 26
Apr. 21.	Vessel,	Chicago, Ill.	Mar. 12
Apr. 22.	Steel lock gates,	Nashville, Tenn.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 22.	Dredging,	New York, N. Y.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 22.	Sewers,	Cincinnati, O.	Apr. 9
Apr. 22.	Paving,	Holland, Mich.	Apr. 9
Apr. 22.	Pipe laying, etc.,	Norwalk, Conn.	Apr. 9
	Advertised, Engineering News, Apr. 9.		
Apr. 22.	Bridge,	Spencer, Ind.	Apr. 9
Apr. 23.	Sewer,	Rockford, Ill.	Apr. 9
	Advertised, Engineering News, Apr. 9.		
Apr. 23.	Paving,	Lakewood, O.	Apr. 9
Apr. 23.	Sewers,	Cleveland, O.	Apr. 9
Apr. 23.	Building,	Seattle, Wash.	Apr. 9
Apr. 23.	Buildings,	Cheyenne, Wyo.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 16.		
Apr. 23.	Dredging,	New London, Conn.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 24.	Brkwtr superstructure,	Marquette, Mich.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 16.		
Apr. 24.	Heating plants,	San Francisco, Cal.	Apr. 9
Apr. 24.	Roads,	Port Townsend, Wash.	Apr. 9
Apr. 25.	Water-works,	Reuteria, Spain.	Mar. 19
Apr. 25.	Building,	Whipple Barracks, Prescott, Ariz.	Apr. 2
Apr. 25.	Armored cable, etc.,	Cleveland, O.	Apr. 2
Apr. 25.	Bridge abutments,	Dayton, O.	Apr. 2
Apr. 25.	Artesian well,	Fort Morgan, Ala.	Apr. 9
Apr. 25.	Bridge,	Dayton, O.	Apr. 9
Apr. 26.	Paving,	Vallejo, Cal.	Apr. 2
Apr. 26.	Electric plant,	Denver, Colo.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 30.		
Apr. 27.	Paving,	Lafayette, Ind.	Apr. 2
Apr. 27.	Building,	Richmond, Ky.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
Apr. 27.	Railway (Foreign),	Ireland	Apr. 9
Apr. 28.	Sewer system,	Cape May, N. J.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 28.	Road,	Cape May, N. J.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 28.	Sewers (104,154 lin. ft.),	St. Louis, Mo.	Apr. 9
Apr. 30.	Stone,	Portland, Ore.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 30.	Rock removal,	Norfolk, Va.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 16.		
Apr. 30.	Cement, sand, etc.,	Washington, D. C.	Apr. 2
	Advertised, Eng. News, April 2 to 30.		
Apr. 20.	Plans for court house,	Greencastle, Ind.	Apr. 9
Apr. 30.	Building,	Washington, D. C.	Apr. 9
Apr. 30.	Supplies, etc.,	New York, N. Y.	Apr. 9
	Advertised, Eng. News, Apr. 9 to 23.		
Apr. 30.	Buildings,	Fort Lincoln, N. Dak.	Apr. 9
Apr. 30.	Dimension timber,	Ottawa, Ont.	Apr. 9
May 1.	School,	Le Sueuer, Minn.	Apr. 9
May 1.	Sewer,	Cheyenne, Wyo.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 23.		
May 1.	Military supplies,	West Point, N. Y.	Apr. 2
	Advertised, Eng. News, April 2 to 30.		
May 1.	Dredging,	Boston, Mass.	Apr. 2
	Advertised, Eng. News, April 2 to 30.		
May 1.	Street cleaning,	Washington, D. C.	Apr. 2
	Advertised, Eng. News, Apr. 2 to May 14.		
May 1.	Bridge,	Indianapolis, Ind.	Apr. 9
May 1.	Log dam,	Hartford, Vt.	Apr. 9
	Advertised, Engineering News, Apr. 9.		
May 2.	Ditching,	Crookston, Minn.	Apr. 9
May 2.	Sinking wells,	Cheyenne, Wyo.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 30.		
May 4.	Building,	Memphis, Tenn.	Apr. 2
	Advertised, Eng. News, Apr. 2 and 9.		
May 4.	Building,	Abbeville, Ga.	Mar. 26
May 4.	Bridge,	Quincy, Cal.	Mar. 26
May 4.	Building,	Fort Brady, Mich.	Apr. 9
May 4.	Sewer and water system,	St. Paul, Minn.	Apr. 9
May 4.	Sewer and pumping station,	Ardmore, Pa.	Apr. 9
	Advertised, Eng. News, Apr. 9 to 30.		
May 5.	Building,	Greensboro, N. C.	Apr. 9
May 5.	Pumping plant,	Atlantic City, N. J.	Apr. 9
	Advertised, Eng. News, Apr. 9 and 16.		
May 6.	Pier repairing,	Grand Rapids, Mich.	Apr. 9
	Advertised, Eng. News, Apr. 9 to May 7.		
May 6.	Building,	Norwich, Conn.	Apr. 2
	Advertised, Eng. News, Apr. 2 and 9.		
May 8.	Steam heating,	Shakopee, Minn.	Mar. 26
May 8.	Extending water system,	Cheyenne, Wyo.	Apr. 9
	Advertised, Eng. News, Apr. 9 to May 7.		
May 11.	Tail-race tunnel,	Toronto, Ont.	Apr. 2
	Advertised, Eng. News, Apr. 2 to May 14.		
May 12.	Gas holder,	Copenhagen, Denmark.	Mar. 26
	Advertised, Engineering News, Mar. 26.		
May 12.	Pumping engine,	Toronto, Ont.	Mar. 19
	Advertised, Eng. News, Mar. 19 to April 9.		
May 12.	Bridges (3),	Magnolia, N. J.	Apr. 9
	Advertised, Eng. News, Apr. 9 and 16.		
May 14.	Paving,	Norfolk, Va.	Apr. 9
	Advertised, Eng. News, Apr. 9 and 16.		
May 15.	Drainage,	Tomah, Wis.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 30.		
May 18.	Bridge,	Fredericton, N. B.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
May 19.	Gunboats (2),	Washington, D. C.	Apr. 2
May 30.	Harbor improvements,	Jamaica.	Apr. 2
	Advertised, Eng. News, Apr. 2 to May 14.		
June 13.	Railway materials,	Siam.	Feb. 5
Jun. 15.	Breakwater,	Manila, P. I.	Mar. 12
	Advertised, Eng. News, Mar. 12 to May 14.		
July 1.	Electric lighting, etc.,	Rangoon, India	Feb. 5
May 2. '04.	Railway,	South Australia.	Feb. 5

NOTICE TO OUR READERS.—Although every effort is made to verify the reports of new construction before their publication in the Supplement, complete verification is not always possible. When it becomes necessary to publish news whose accuracy has not been verified, the phrases "according to reports," "it is stated," or other expressions of similar import are attached to the item. We will be obliged to our readers if they will send us prompt reports of any work in which they may be interested, and also to call our attention to any important errors that may be noticed in these columns, and give us the correct details. When writing to persons and companies mentioned in this department, our readers will confer a favor by mentioning Engineering News as the source of their information.

RAILWAYS.

(For foreign railways see under "Foreign Contracts and Export News.")

ATCHISON, TOPEKA & SANTA FE.—Negotiations are reported completed for the purchase of the Eel River & Eureka R. R., 25 miles in length, and capitalized at $180,000, running from Eureka, Cal., to Burnello.—A surveying party, headed by F. M. Bisbee, has gone to Eureka for the purpose of locating a line towards Willets, Mendocino county. W. B. Storey, Jr., is Ch. Engr. Topeka, Kan.

BILOXI, WAYNESBORO & CAHABA VALLEY.—The charter for this new company has been secured in Mississippi. The company is capitalized at $300,000 and will build a steam road from Biloxi through the states of Mississippi and Alabama. W. K. M. Dukate, H. M. Folkes and W. O. Talbott are interested.

BLACKSTONE & SOUTHERN.—T. M. T. McKennan, Ch. Engr., Chase City, Va., informs us that the name of the Blackstone & Chase City R. R. has been changed to the above and that the road will be built under the charter granted to the B. & S. in 1900. Mr. McKennan states that grading is now going on from Blackstone, Va., eastward to McKinney, on the Seaboard Air Line, and that it will be 30 days before any contracts are awarded. J. M. Harris, Blackstone, is Pres., and B. F. Patterson, Chase City, Gen. Mgr.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

CENTRAL FLORIDA & INDIAN RIVER.—W. T. Wells, Vice-Pres., Melbourne, Fla., writes that considerable progress has been made on this line in obtaining rights of way and land donations. The road will run from Melbourne to Orlando and Bartow, Fla., and will be some 125 miles long. It will have a deep water terminal. J. G. Jenkins, Jr., New York, is Pres.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—Geo. W. Kittredge, Ch. Engr., Cincinnati, O., writes us that he will receive bids until April 20 for grading a double track roadway between Lawrenceburg Junction and Sunmans, Ind., a distance of 18 miles. The work will require the removal of approximately 2,000,000 cu. yds. of material from excavation and placing it in embankments.

COAST-YUKON.—A syndicate of Vancouver, B. C., men are looking to the building of a railway from Kitimaat Inlet through the northern part of British Columbia and the Yukon to Dawson, to be known by this name.

EASTERN RY. & LUMBER CO.—Reports from Washington state that this company will be incorporated with a capital stock of $500,000 by eastern capitalists and Lewis county, Wash., mill men, and will build a standard railway, 14 miles long, with connecting spurs to the company's timber lands.

FORT SNELLING.—The following bids were received on March 26 for constructing the new spur track at Fort Snelling, Minn., 6,700 ft. long, for the accommodation of the post: M. J. Peppard & Co., Minneapolis, $14,800; Jas. B. Secombe, Minneapolis, $19,700; Geo. W. Oakes & Co., St. Paul, $16,283; Newman & Hoy, St. Paul, $14,900.

LITCHFIELD & ST. LOUIS.—This company has filed articles of incorporation in Illinois with a capital stock of $10,000 to build a line of railway from a point on the C., C., C. & St. L. east of Litchfield, Ill., to a point south of that city. Chas. B. Munday, Jr., M. M. Milnor and Daniel W. Taylor, Litchfield, are incorporators.

LOS ANGELES, DAGGETT & TONAPAH.—Harry Griswold, Ch. Engr., has returned to Los Angeles, Cal., after completing surveys for this road. The line will run from Daggett, about 75 miles north of San Bernardino City, northeast along the side of Death Valley county to Tonapah, a distance of about 250 miles. Construction is expected to begin by June.

LOUISVILLE & NASHVILLE.—A contract is reported to have been let by this company for building a branch road from the Birmingham Mineral road in Blount county, Ala., to Lehigh, where the Lehigh Coal Co. is opening up new coal mines. The road is to be completed within 90 days.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—T. Lowry, Pres., Minneapolis, Minn., is reported to have announced on March 26 that the company will build into the White Earth reservation. The new line has been surveyed north from Glenwood and will be at least 200 miles in length. The material for construction is now being assembled and work will be started within a short time. As much as possible will be built this summer. The terminus is not yet determined on. Thos. Green is Ch. Engr., Minneapolis.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—L. R. Wright & Co., Macon, Ga., have received the contract for building the extension of the road from De Rossett to Eastland, Tenn., seven miles. The work will include some heavy construction.

NEWBURG & SOUTH SHORE.—The contract for building this road for the U. S. Steel Corporation has been awarded to Wm. Kenefick, Kansas City, Mo. The road will be 7½ miles long, and will run around Cleveland, O., providing terminals for all the company's plants around that vicinity.

NORTHERN PACIFIC.—S. A. Oakes, Asst. Engr., Seattle, Wash., writes that bids are being called for a portion of the work in connection with the terminal at Seattle. Nothing definite is known as yet as to the amount of the work. For further information W. L. Darling, Ch. Engr., St. Paul, Minn., should be addressed.

NORTHWEST COAL & COKE CO.—Reports from Spokane, Wash., state that this company will build a road 16 miles long running from the Crows Nest Pass road, in British Columbia, up the North Fork, a distance of 16 miles, to the coal lands on the north fork of Old Man's Creek.

PENNSYLVANIA.—A company is reported being formed to build a railway 10 miles long entering an undeveloped coal territory west of Shannopin, 18 miles west of Pittsburg. The road will be standard gage and will have connections with the Pittsburg & Lake Erie. It will be built in two sections, the first commencing at Riverview and connecting with the P. & L. E., being six miles long. From Riverview it will go west, touching an undeveloped coal field of 5,000 acres. Surveys are said to have been completed and contracts are to be awarded soon.

PORTLAND, VANCOUVER & YAKIMA.—It is stated that the company has contracted for the construction of three miles of additonal roadbed in Washington that will require the removal of 185,000 cu. yds. of earth.

RICE BELT RY.—Ross L. Clark, Pres., Port Lavaca, Tex., has stated as follows regarding this road: "The Rice Belt railway will be built from Galveston to Brownsville, a distance of 350 miles, just as soon as money and energy can lay the rails. We have all the money we need and the line will be properly constructed and equipped. We expect every foot of the right of way to be donated. In addition, every county through which the line will run will give us a bonus ranging from $10,000 to $40,000. The line will cross Matagorda Bay at the old Indian ford, just below Port Lavaca, and will keep close to the shore line all the way to the Mexican border. Much of the route has been surveyed, and the reason we are not at work now is due to the recent heavy rains."

SEABOARD AIR LINE.—Arrangements are being made for letting contracts for the construction in the city limits of Birmingham, Ala., on the line between Irondale and Birmingham. W. W. Gwathmey, Jr., is Ch. Engr., Portsmouth, Va.

SILVERTON NORTHERN.—Otto Mears, Pres., P. O. Box 908, Denver, Colo., writes that surveying will not commence until the middle of May.

SUMPTER VALLEY RY.—Joseph Barton, Gen. Pass. and Freight Agt., Baker City Ore., is reported to have stated that the management has decided to extend the road beyond Whitney.

TEXAS & ALABAMA.—The survey for this road into Wichita Falls, Tex., has been completed and construction work will begin within 60 days and be completed to Red River by December.

TEXAS, MOUNTAIN PARK & NORTHWESTERN.—A charter has been issued to this company in Oklahoma, with capital stock of $4,000,000, to build a road from Mountain Park to Woodward, passing through Kiowa, Greer, Roger Mills, Day and Woodward counties, an estimated distance of 200 miles. B. K. Kelley and Burt Hillyer, Mountain Park, and A. J. Robertson, Texowa, are interested.

VERNON, ROSWELL & EL PASO.—This company will file its charter in Texas in a few days. It proposes building an extension of the Blockwell, Enid & Southwestern branch of the Frisco to a connection with the El Paso line of the Chicago, Rock Island & Pacific at Alamagorda, N. Mex., passing through Roswell, N. Mex., a distance of some 300 miles. It is stated that the contract will be let and the construction started within 90 days.

WALLA WALLA & SOUTHERN.—Incorporated in Washington with a capital stock of $100,000, to build a line some 500 miles long, tapping the timber belts of the Blue Mountains. Jas. McCabe is Pres., and A. Balderstone, Secy. and Treas., Walla Walla.

WASHINGTON.—Reports from Whatcom state that the Bellingham Bay Improvement Co. will construct a line three miles long connecting with the Northern Pacific from their coal mines at Black Diamond.

WASHINGTON & GREAT NORTHERN.—It is reported at Greenwood, Wash., that there is no longer any doubt but that the road to Greenwood and connecting with the Republic mining camp will be built. Arrangements are now being made and as soon as completed work will start, the route having been decided on.

WESTERN MARYLAND.—J. Q. Barlow, Ch. Engr., Cumberland, Md., informs us that the location is finished and the right of way is being secured on the Cumberland extension, from Cherry Run to Cumberland, Md., about 65 miles, and the location is finished and grading begun on the Tidewater extension at Baltimore, six miles in length.

WYOMING & BLACK HILLS.—Articles of incorporation have been filed by this company in Wyoming with $2,000,000 capital stock, to build a road from Upton through the Sundance coal fields, thence to Bulah and to Belle Fourche, S. Dak. The new road will be about 100 miles long. L. C. Twombly is Pres. and Gen. Mgr.; Andrew E. Johnson, Vice-Pres., and C. L. Wallace, Secy., probably of St. Paul, Minn.

ZANESVILLE, MARIETTA & PARKERSBURG.—A contract has been awarded to McArthur Bros. & Co., Chicago, for constructing this road, which will be one of the links of the Wabash Seaboard Air Line, at a cost approximately $2,500,000. Of this amount about $2,000,000 will be used for grading and masonry. The line runs from Zanesville to Marietta, a distance of 68 miles, but by the purchase of the Marietta, Cleveland & Columbus road only 50 miles will have to be built. The maximum grade will be 26 ft. to the mile, compensated, and the maximum curvature 4°. There will be three short tunnels and several small viaducts, the only one of importance being a steel bridge across the Licking River at Zanesville. This will be about 300 ft. long. The road will be built single track, and is to be finished within a year. A bridge over the Wabash River, at Parkersburg, W. Va., about 1,600 ft. long, and costing about $750,000, will be built by a company organized for that purpose, but will be used by this road. J. T. Blair is Pres., Pittsburg, Pa.

STREET AND ELECTRIC RAILWAYS.

(For foreign street and electric railways see under "Foreign Contracts and Export News.")

BRISTOL, CONN.—The directors of the Bristol & Plainville Tramway Co. voted on March 28 to extend their line to Ferryville at once. Some grading has already been done, and the new line will be finished by July 1. E. C. Smith is Ch. Engr.

ALBANY, N. Y.—The Rapid Transit Commission will have an amendment made to the Rapid Transit law eliminating the provision that restricts the expenditure for tunnel or underground roads to $50,000,000, in order that the proposed Brooklyn extension may be built. The cost of this road will be about $40,000,000.

NEW YORK, N. Y.—Mayor Low has signed the franchise granting to the New York Interborough Ry. Co. the right to operate a street surface railway in the Bronx. The franchise is for a period of 25 years.

PATCHOGUE (L. I.), N. Y.—The village trustees and town highway commissioners have granted a franchise to the South Shore Traction Co. for the laying of trolley tracks from the Islip town line to the Connetequot River at Brookhaven. J. F. Hayward represents the company.

ONEIDA, N. Y.—The Oneida Ry. Co. is engaged in securing the right of way through the towns of Verona and Westmoreland for its trolley road from this city to Stanwix, Rome, where connection will be made with the Utica & Mohawk Valley R. R. H. J. Clark is Ch. Engr.

CANISTEO, N. Y.—L. D. Whiting, Pres. Canisteo, Jasper & Woodhull Ry., writes that the surveys for the company's proposed 13-mile road have been made and the right of way obtained. W. G. Kellogg, Greenwood, N. Y., is Ch. Engr. The line will be electrically operated.

SCHENECTADY, N. Y.—It is said that the Schenectady Ry. Co. has authorized the issue of $7,000,000 additional bonds, which will be used to pay for the extension of the lines to Ballston, Amsterdam and other places in the vicinity, as well as to provide for general betterments. R. H. Fraser is Vice-Pres. and Gen. Mgr.

TRENTON, N. J.—The Illinois Ry. & Lighting Co. has been incorporated with a capital stock of $3,000,000 to construct and operate street railways and to furnish light. L. B. Dailey, J. M. Mitchell and H. O. Coughlan, Jersey City, are incorporators.

BLAIRSVILLE, PA.—Thos. C. Brown, Pres. Blairsville & Derry St. R. R. Co., writes us that surveys will now be taken up and contracts will be let this summer. The road is partially capitalized. It will be run in almost a straight line and will be practically without grades. The route will be 15 miles long and run from this place to Coketon, Hilside, Millwood, Ridge View Park, Derry, Bradenville and Loyalhanna. Electricity will be the motive power used. J. A. C. Ruffner is Secy.

HARRISBURG, PA.—The Curwensville & Power R. R. Co. has been incorporated with $60,000 capital stock to build 16 miles of road in Clearfield county. Congressman Olmstead, of this city, is Pres. of the company.

PHOENIXVILLE, PA.—R. K. S. Allebach, Temporary Chn. Phoenixville & West Chester Electric Ry. Co., writes us that preliminary surveys are made and practically a free right of way obtained for the electric line from this place to West Chester via Malvern. Negotiations are being made for the capital and contracts are expected to be awarded soon. The line will be 18 miles long.

PITTSBURG, PA.—It is stated that a new street railway is being promoted in Westmoreland county, connecting two busy sections of the Monongahela and Youghiogeny valleys and known as the Webster & West Newton St. Ry. The line will be about five miles long, and will cost $100,000. It is being promoted by W. L. Sheets, J. C. Devenny and W. C. Nine, formerly of Kansas City, but now of McKeesport.

PITTSBURG, PA.—Governor Pennypacker has granted a syndicate of Pittsburg and New York charters for a labyrinth of street railways in this city and Wilkensburg, which will cover about 45 miles, and will approximately cost $2,000,000. The charters granted follow: Squirrel Hill & Wilkinsburg St. Ry. Co., Pittsburg, to build 15 miles of road; Iron City St. Ry. Co., Pittsburg, to build eight miles; Pittsburg Rapid Transit Co., Pittsburg, to build 12 miles. The incorporators are Walter F. Render, M. J. McGinn, Frank P. Graffin, Albert G. Calvin and Patrick Cavanaugh. The combined capital of the roads is $255,000.

SKIPPACK, PA.—Reports state that $50,000 has been subscribed toward the building of the Souderton, Skippack & Fairview Electric Ry., and that as soon as $15,000 additional has been subscribed the road will be built.

WILKESBARRE, PA.—Local papers state that plans have been completed and surveys finished for a new road to be known as the Scranton, Factoryville & Tunkhannock Ry., and work will be commenced in six or eight weeks. The main line will pass through Clark's Green, Waverly, Dalton and Factoryville, thence to Tunkhannock, and branch road will run to Lake Winola and Lake Carey. The company is capitalized at $500,000. J. Selden Swisher, Pass. Agent Jersey Central, is Pres.; J. P. Dickson, Freight Agt. D. & H. R. R., Vice-Pres., and A. B. Dunning, Ch. Engr. Chas. W. Seeley, Scranton, and J. B. Knecht, this city, are also interested.

WASHINGTON, D. C.—Syl. T. Smith, of Chicago, Pres. Chesapeake & Beach Ry., is now in this city to attend a meeting of the directors, where it will be decided to change the road from a steam line to an electric and make it double track.

WHEELING, W. VA.—Local papers state that Col. John T. McGraw, Grafton, is interested in the project to build a street railway between Adamstown and Salem.

ST. AUGUSTINE, FLA.—John H. Longstreet has asked for a franchise for an electric light plant and a trolley system of street cars, and if granted his plans will probably be carried out within the next 12 months.

LOUISVILLE, KY.—T. J. Minary, Pres. Louisville Suburban Ry., informs us that the company is now building a line 13 miles in length to Jeffersontown. Surveys have been made for three routes out of Louisville, two of which will probably be built during the next 12 months. T. H. Minary is Ch. Engr.

LOUISVILLE, KY.—The Ohio Valley Traction Co. has applied for a right of way through this city for its line, which will connect Cincinnati and Louisville, and be some 110 miles in length. The construction will be started within the next few weeks, it is stated. H. S. Berry, Covington, Ky., is the promoter.

COLUMBUS, O.—The Peoples' Rapid Transit Co. of Toledo, capitalized at $500,000, has been incorporated by James M. Morgan, Louis J. Weadock and Thos. M. Franey and others, to build an electric line from Cincinnati to Toledo, passing through 12 counties.

CINCINNATI, O.—City Engineer Layman, of Cincinnati, has started the survey of the Madison, Greensburg & Indianapolis Traction Co.'s road. Contracts for construction are already being considered.

TOLEDO, O.—T. R. Wickenden, Ch. Engr. Toledo, Pt. Clinton & Lakeside Ry. Co., informs us that most of the right of way has been secured and contracts for the rails, ties, cars and overhead equipment have been let. Grading will commence April 7 and it is expected to have 25 miles of the road in operation by September. The capital is secured. The road will be about 60 miles long, and will run from this city to Curtice, Genoa, Elmore, Oak Harbor, Pt. Clinton, Lakeside, Marblehead and Ottawa City. P. McCrary is Pres.

COLUMBUS, IND.—The Indiana Central Electric Ry. Co. has incorporated to build a line from this city to West Baden. John B. Burrell, of Paoli, and others are the incorporators.

INDIANAPOLIS, IND.—The Indiana Western Ry. Co., incorporated with $10,000 capital stock, will build an electric road from Laporte to Michigan City. D. D. Bates, Eugene Miller and Wm. Storer, South Bend, are incorporators.——The Toledo & Chicago Interurban Ry. Co. has been organized with $500,000 capital stock, to construct a line across Indiana through De Kalb, Noble, Steuben, Allen, Elkhart and Kosciusko counties. F. E. Seagrave, Arthur B. Shepard and R. D. Murray are incorporators.——Town end, Reed & Co., who constructed the Indianapolis, Shelbyville & Southeastern traction line, have been instructed by the board to prepare estimates for the extension of this line to Greensburg, a distance of 22 miles.——The Frankfort & Logansport Traction Co. has filed articles of incorporation and will build an electric line between those points, passing through Carroll county. The capital stock is $100,000. W. P. Sidewell, Frankfort; M. A. Jordan, Logansport; O. V. Darby, Kokomo, and Chas. S. Karoly, Aurora, Ill., are incorporators.

INDIANAPOLIS, IND.—Arthur Overstreet, of Columbus, O., is said to be here for the purpose of filing articles of incorporation for an electric railway from Columbus to West Baden, via Seymour.——The Indianapolis, Danville & Rockville Traction Co. is purchasing its right of way, and surveyors have already gone over the line to Rockville from this city making levels. The road will follow the Rockville pike from this city for a distance of 60 miles, touching Danville, Bainbridge, Morton, Hollandsburg, Bellmore and Rockville. Everett Wayner, Indianapolis, is Pres.; J. W. Ader, Vice-Pres.; J. W. Trotter, Secy., and W. C. Osborne, Treas., all of the three last named living at Danville.

SOUTH BEND, IND.—The St. Joseph Valley Traction Co., has filed articles of incorporation with $200,000 capital stock. The company will build from South Bend to Lagrange. Rollin Ellison is Pres.

VINCENNES, IND.—The council has granted a 50-year franchise to the Western Indiana Traction Co., to build an interurban electric line in this city, and to Sullivan, Ind., a distance of 31 miles.

MUSKEGON, MICH.—The West Michigan Interurban Ry. Co. has filed articles of incorporation with $100,000 capital stock, to build an electric road from Grand Rapids to Hart via Mill Creek, Sparta, Kent City, Casnovia, Slocum, Muskegon, Whitehall, Montague and Shelby. E. M. Deane, Grand Rapids; Judge F. J. Russell, Hart; C. L. Churchill, Shelby, and Wm. E. Osman, Montague, are incorporators.

CHICAGO, ILL.—Smith H. Bracey, Pres., of Chicago and Quincy, informs us that the Brady-Howard Construction Co., Quincy, has the contract for building the Quincy & Western Illinois Ry. The surveys are completed to Beardstown and the right of way secured. The road will be an electric, some 125 miles long, and will run from Quincy to Beardstown, and also to Nista, Ill. E. H. Arnold, Quincy, is Ch. Engr.

SPRINGFIELD, ILL.—Articles of incorporation have been filed by the Dixon, Rock Falls & Southwestern Electric Ry. Co., with $50,000 capital stock, to build a line from Dixon to Rock Island. O. E. Maxson, A. J. McNeil and B. L. Sheldon, Rock Falls, Ill., are interested.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

PAPILLION, NEB.—Lyman Waterman is promoting an electric railway from Omaha to this city. Surveyors have already gone over the route, which will run from South Omaha to Sappy Mills and thence to Papillion. Mr. Waterman will soon ask for a franchise.

CHEYENNE, WYO.—The feasibility of a street railway system is reported to be under discussion by local parties. Arrangements for the electric power have already been made, and it is likely that the road will be built within the next year.

COLUMBIA, MO.—Plans are being perfected for an electric railway, to run from Columbia through Ashland and other small towns to Jefferson City. Senator B. M. Anderson, S. M. Myers and Joe Scott are pushing the enterprise. George B. Harrison, Pres. Central Missouri Electric Ry. Co., states that the financing of the road is complete, and that construction will begin as soon as the right of way can be secured.

KANSAS CITY, MO.—The Metropolitan St. Ry. Co. is planning to issue $20,000,000 in bonds to cover the cost of the erection of the new power house, the construction of new lines and extensions, and the purchase of new equipment.

COLORADO SPRINGS, COLO.—Fred. C. Adams, of Denver, who is promoting the construction of an electric railway from Denver to Pueblo and Colorado Springs, is being backed by Denver men connected with the First National Bank of that city, with which he is identified. The new line will pass through Castle Rock and Palmer Lake and is estimated will cost between $7,000,000 and $8,000,000 to build.

EVERETT, WASH.—Local papers state that the commissioners granted Mr. Johnson a franchise to build and operate an electric line between Everett and Snohomish.

FAIRHAVEN, WASH.—J. Clark says local parties are working to secure an electric line to La Conner, and also one north to Ferndale and Brick Bay county to Blaine.

FERNDALE, CAL.—The Van Duzen Electric Power Co. has a corps of surveyors here to survey the route for a branch electric line to connect Ferndale at a point near Alton. Allie Baird, Engr., has charge of the party.

LOS ANGELES, CAL.—Local papers state that 42 trolley franchises are wanted in this city. W. M. Garland, Los Angeles, backed by Eastern capitalists, is the chief applicant.

RIVERSIDE, CAL.—H. E. Huntington, who has had surveyors at work on a line through the lower Santa Ana Canyon and Corona to Riverside, states that if the city will drop the suit in regard to the supply of electricity, he would within two years build a double-track electric line from Corona to this city, utilizing the present track through center of city and build a line out Eighth St. to Roubidoux Mountain and back Seventh St. to Main; also put in his own electric plant so that city can have its electricity for its own use.

OAKLAND, CAL.—A franchise for a street railway over a mile of the city's streets has been granted to J. H. McDonald.

SAN FRANCISCO, CAL.—The North Shore R. R. has completed surveys for an electric line from Bolinas to Manzanita Station.

BERLIN, ONT.—W. H. Breithaupt, Pres. Berlin & Bridgeport Electric St. Ry. Co., Ltd., Berlin, writes that the extension to Bloomingdale, etc., will probably not be made this year. The company is now making a short extension in Bridgeport and is building a casino there and otherwise improving a park.

GALT, ONT.—The Galt, Preston & Hespeler St. Ry. will expend about $30,000 in improvements this year, which will provide for double-tracking the line between Galt and Preston.

LONDON, ONT.—F. H. Hitchcock, Pur. Agt., Detroit, Mich., informs us that with the exception of two or three miles the surveys are completed and profiles made for the line of the London, Aylmer & North Shore Electric Ry. Co., and on this unsurveyed section it is proposed to make a change in the route. The line will be 45 miles long, and run from London, Belmont and Aylmer to Pt. Burwell, Ont. Matthew Connor, Aylmer, Ont., is Pres., and Field, Hinchman & Smith, Detroit, Mich., and Windsor, Ont., Ch. Engrs.

LIGHT, HEAT AND POWER PLANTS.

(For foreign heat, light and power plants see under "Foreign Contracts and Export News.")

PETERBORO, N. H.—Electric plant talked of.

SOMERSWORTH, N. H.—A bill has been before the legislature to authorize this city to establish a municipal electric plant. Mayor J. W. Haines writes us that nothing will be done in regard to the matter until August or September.

BELCHERTOWN, MASS.—Street lighting discussed.

GREENFIELD, MASS.—We are informed that preliminary plans are out for developing the water power at Gardner Falls. About 400 HP. can be developed. Clapp & Abercrombie, Greenfield, are Engrs.

PROVIDENCE, R. I.—It has been estimated that betterments costing $500,000 will be made to the plant of the Providence Gas Co., of which E. S. Cathels is Supt. of Wks.

NEW BRITAIN, CONN.—The New Britain Gas Light Co. has asked leave to increase its issue of bonds from $150,000 to $400,000. The resulting funds are to be used for developing and extending the plant.

BUFFALO, N. Y.—Cataract Power & Conduit Co. is to make an addition to its plant at 2280 Niagara St., at a cost of $6,000.

GREENE, N. Y.—E. L. McKenzie, Village Pres., writes us that a bond issue of $40,000 has been voted for electric light and water. The water commissioners are to organize soon and will employ an engineer to prepare plans. The present idea is to have a combined pumping and electric light plant.

NEW YORK, N. Y.—L. C. Holden, Arch., 1133 Broadway, New York, writes us under date of April 6 that contracts are to be awarded immediately for the Klots Throwing Co.'s plant at Cumberland, Md. The plant is to be operated by steam, and Geo. Klots, Scranton, Pa., is interested.

NEW YORK, N. Y.—Press reports quote Harrison E. Gawtry, Pres. Consolidated Gas Co., as announcing that arrangements had been completed by which all the gas plants on Manhattan Island, scattered along the East River and North River water fronts, would be removed within the next two years to Lawrence Point on the Long Island shore of Hell Gate, about opposite 116th St. At present these plants have a capacity of 46,000,000 cu. ft. a day, but it is proposed to erect gas works having a capacity of 200,000,000 cu. ft. per day.

MANHEIM, PA.—A new electric light plant is to be installed here.

SPRINGTOWN, PA.—It is stated that the Pike Water Power Co. proposes to increase its power either by adding to its present dam in Wallenpaupack Creek, Palmyra, or by erecting a new dam in the near vicinity.

SEAFORD, DEL.—New city electric plant talked of.

BALTIMORE, MD.—The contract for establishing a new electric light system in the department store of Stewart & Co., Lexington & Howard Sts., has been let to Kingsbury & Samuels. The contract involves about $25,000.

WASHINGTON, D. C.—Bids are asked by A. C. Toner, Comr. Indian Affairs, Interior Department, until April 16, for a steam heating plant at Cherokee School, North Carolina.

PETERSBURG, VA.—We are informed that the plans for the power plant of J. M. Odell Co., at Bynum, N. C., on the Haw River, have been completed. The work, however, will probably be done by day labor on dam, headgates and canal. Nothing has yet been done regarding wheel machinery. Jno. W. Hays, Cons. Engr., Petersburg, Va., is official in charge.

HINTON, W. VA.—The local light and water plants have been purchased by O. M. Lance and others of Wilkesbarre, Pa., the light plant for $25,000 and the water-works for $51,000.

CALHOUN, GA.—Electric plant to be operated at pumping station proposed.

ST. AUGUSTINE, FLA.—Franchise for establishing electric light plant and operating electric railroad has been asked by John H. Longstreet, Philadelphia, Pa.

FLORENCE, ALA.—Franchise for electric light and power plant has been granted to J. W. Worthington, Pa.

VICKSBURG, MISS.—Harry K. Johnson, Natchez, Miss., has purchased all the interests in the Vicksburg Power & Manufacturing Co., owners of the electric light plant and street railway, and press reports state that he will enlarge the plant and extend the street railway.

RUSTON, LA.—City electric light plant is to be improved at cost of $20,000. B. F. Thompson is Mayor.

PADUCAH, KY.—The contract for furnishing supplies and a new dynamo has been let to the Fort Wayne Electrical Co., Fort Wayne, Ind., for about $2,000.

CINCINNATI, O.—We are informed that the Cincinnati & Columbus Traction Co., E. Darrow, Cons. Engr., Commercial Tribune Bldg., is ready to buy 5 400-KW. rotaries, 20 cars, 3,500 poles, pumping plant, etc., for proposed power plant at Lanoon, O. Much of the equipment for the plant has already been bought.

DELAWARE, O.—Hawley & Wharton, Archs., Westinghouse Bldg., Pittsburg, Pa., are stated to have plans for a power house and barns for the Union Electric Ry. Co., the estimated cost of which is $8,000.

ELKHART, IND.—The National Manufacturing Co., according to reports, proposes to build a power plant at Bristol, on the St. Joseph River, ten miles above here. Walter Brown is said to be interested.

NOBLESVILLE, IND.—Franchise for an electric light plant has been granted to Thomas Griffin, who proposes to erect a 16-ft. dam across to White River, near Conner's Mill, and to install a power house at that place.

WINDFALL, IND.—Construction of large heating plant by private parties contemplated.

ECORSE, MICH.—City electric system proposed.

FORD, MICH.—M. L. Brown, C. E., 1820 Chamber of Commerce, Detroit, Mich., has submitted estimates for an electric light and water system for this place. The cost of the lighting system is $5,200 and of the water-works $20,080.

GRAND RAPIDS, MICH.—We are informed that all contracts, except for brick work, for proposed improvements of the Grand Rapids Gas Light Co. have been let. The pipe laying is always done by the company. Wm. Eaton, Gen. Mgr.

NORTH ADAMS, MICH.—City electric plant talked of.

WOODMERE, MICH.—President Gilbert has recommended that some action be taken toward securing street lights.

ASHTON, ILL.—M. N. Glenn, Village Clk., writes us that the following bids were received March 25 for installing gasoline gas plant: Practical Gas & Construction Co., North Chicago, Ill., $6,500; Leckboud Gas Co., Mason City, Ia., proposition No. 1, $5,983; for brick building, additional, $3,500; Leckboud Gas Co., Mason City, Ia., proposition No. 2, $5,082; Detroit Heating & Lighting Co., Detroit, Mich., $6,600.

ACKLEY, IA.—Breuning & Symingston have sold their electric light and heat plant to St. Paul parties. The plant was valued at $20,000.

BODE, IA.—Town to vote on electric plant.

DUBUQUE, IA.—The Chicago, Milwaukee & St. Paul R. R. Co. is to install a new 750-HP. plant at their shops, at a cost of $25,000.

MAPLETON, IA.—Franchise for gas plant for light and heat purposes has been asked for by W. H. Leathers and others.

SHELBY, IA.—City may have lighting system at cost of $5,000. H. D. Read is Mayor.

MANKATO, MINN.—J. B. Hodsapp, Cy. Recorder, writes us that all bids received March 30 for an electric light plant were returned unopened, and the matter indefinitely postponed. These parties submitted bids: J. G. Robertson, St. Paul, Minn.; Crowley Electric Co., Duluth, Minn.; Minneapolis Electric & Construction Co.; Electric Construction Machinery Co., Rock Island, Ill.

TWO HARBORS, MINN.—The contract for erecting the new power house and laying the intake pipe has been let to Pastoret & Lunz for $22,450.

ASHLAND, NEB.—W. J. Brownell has been asking for an electric light plant franchise here.

PLATTSMOUTH, NEB.—Franchise for electric and gas light and heating plant has been granted to Chas. C. Parmele.

ROCKPORT, NEB.—$7,000 has been voted for improving electric light system. Dr. A. McMichael is Mayor.

SEWARD, NEB.—City electric plant talked of.

BOZEMAN, MONT.—Reports state that the time for receiving bids for street lighting has been extended to April 16. About 35 street lights required. Contracts for a two or five-year term. T. M. Pierce, Cy. Clk.

GREAT FALLS, MONT.—John D. Ryan and Mrs. Marcus Daly have applied for a franchise for electric lights, heating and street railway for a term of 25 years. A special election is called April 25 to vote on the matter.

ST. LOUIS, MO.—We are informed that contracts have been let for the proposed $250,000 power house of the St. Joseph Railway, Light, Heat & Power Co. The plant is to be operated by steam, and Lichter & Jens, Bank of Commerce Bldg., St. Louis, were Des. Engrs.

PALOUSE, WASH.—A 25-year electric light franchise has been granted G. W. Pettycord and C. E. Frederick.

SPOKANE, WASH.—Reports state that the Spokane Falls Gas Light Co. will lay five miles of new gas mains this spring.

SHELTON, WASH.—It is stated that the capacity of the local electric light plant is to be doubled. W. W. Kneeland is interested.

SUMPTER, ORE.—It is stated that work will be commenced in June or sooner for the water power electric plant of the local Electric Light & Power Co., to be built on Cracker Creek.

EUREKA, CAL.—The Humboldt Light & Power Co. is said to have secured a site for a new power plant. Allie Baird, C. E., has been making a survey for the proposed wire line.

FRESNO, CAL.—It is stated that the San Joaquin Power Co. will install on the San Joaquin River a duplicate of the plant now in use. W. G. Kerchoff is Pres.

SACRAMENTO, CAL.—A state appropriation of $3,000 has been made for improving the lighting system at Agnews State Hospital.

COEUR D'ALENE, IDAHO.—Franchise for light and water systems here have been granted to the Cable Mining Co.

NEZ PERCE, IDAHO.—The contract for constructing the dam and power house of Z. A. Johnson has been let to Jos. Christie. The power transmission line is to be 12 miles long.

WALLACE, IDAHO.—G. Scott Anderson has applied for a franchise for establishing a gas plant and system.

WALLACE, IDAHO.—G. Scott Anderson, acting for California capitalists, has made application to city council for a franchise and system in this city.

TORONTO, ONT.—Mayor Urquart has recommended that the city purchase the local gas company's plant for $3,753,170.

TORONTO, ONT.—Bids are asked by the Raven Lake Portland Cement Co., 16 King St. West, Toronto, until April 18, for constructing an electrical transmission line between Raven Lake and Elliotts Falls.

FORT STEELE, B. C.—J. M. Teller and Geo. E. Henderson have purchased land around Bull River Falls, where they propose to erect a power plant.

BONDS.—Statesboro, Ga., votes to issue $37,000 electric light and water-works bonds.——Randolph, Wis., was to vote April 7 on electric light plant bond issue. E. C. Walker is Village Clk.——Athens, O., was to vote April 6 on issue $10,000 electric light plant construction bonds.——Jacksonville, Fla., proposes to issue bonds for electric light plant.——Griffin, Ga., will vote on issue of $100,000 of bonds for improving light and water plant and for a sewerage system.——Attica, N. Y., will vote on issue of $6,000 electric light plant bonds.——Montague, Mich., will vote on bond issue for electric light plant.——Shelby, Ia., may vote $5,000 bond issue for electric lights.——Hubbard, O., votes April 6 on $10,000 bond issue for building electric light plant. W. J. Jackson is Mayor.

NEW COMPANIES.—Dallas Electric Light & Power Co., Dallas, Ore.; $20,000; H. D. Ellis, T. A. Wagner, W. R. Ellis.——Economic Lighting Co., Norfolk, Va.; $1,000,000 to $20,000,000; Samuel B. Lawrence, Alfred T. Davison, John B. Summerfield.——North Norfolk Land Co., Norfolk, Va.; $30,000; sewers, gas and electric light plants, etc.; S. Q. Collins, Eugene Ives.——Conconally, Wash., Inc., Similkameen Falls Power & Development Co., Conconally, Wash.; $1,200,000; C. F. Hagerty, Wm. Wegel, Nagle City, Wash.——Norfolk Electric Light & Gas Co., Norfolk, Va.; $10,000 to $50,000; C. A. Nash, T. H. Synon, W. W. Dey.——Independent Light & Power Co., Quincy, Ill.; $300,000; J. W. Cassidy, C. E. Mead and L. Wheeler; an ordinance is now before the city council for a franchise.——Frontier Electric Lighting Co., Buffalo, N. Y.; $800,000; Alexander C. Humphreys, Fred. Strauss, Stephen Peabody.——Buffalo Hump Power & Light Co., Lewiston, Idaho; $100,000; Geo. K. Reed, K. W. Brown, C. Flint.

BRIDGES

(For foreign bridge work see under "Foreign Contracts and Export News.")

SPRINGFIELD, MASS.—Chas. M. Slocum, Cy. Engr., writes us that plans are being made for raising South End bridge. A special commission will report soon on this bridge. Mr. Slocum also writes that the N. Y., N. H. & H. R. R. Co. are now building a new bridge where St. James Ave. crosses the Highland division.

TAUNTON, MASS.—Luther Dean, Cy. Engr., writes us that the contract for the steel work for the Mill River bridge at Weir St. has been let to the Eastern Bridge & Structural Co., Worcester, Mass. We are also informed that a bridge over Taunton River at Weir Village is contemplated.

BUFFALO, N. Y.—The matter of a new bridge over the Buffalo River at Ohio St. is said to be under consideration by the council.

COLLEGE POINT, N. Y. (L. I.)—Petitions are to be presented to Joseph Cassidy, Queens Borough Pres., asking for a bridge over Flushing Creek in a line with 13th St.

NEW YORK, N. Y.—Bids are asked by the park board until April 16 for a concrete, steel and stone bridge over the Bronx River near Newell Ave., in Bronx Park. Wm. R. Willcox, Comr., Arsenal Bldg.

MAGNOLIA, N. J.—Bids are asked until May 12 for building two duplicate steel bridges on the Pleasantville highway, as is stated in our advertising columns. J. J. Albertson, Co. Engr.; Frank Enderlin, Chn. Bridge Com.; Cologne, N. J.

PATERSON, N. J.—The contract for a concrete and steel bridge on Spruce St. hill has been let to Frank R. Long Co. for $8,912.

SOMERSET, N. J.—The construction at a cost of $3,000 of a joint county bridge at Girard Ave., Plainfield, has practically been decided upon.

ERIE, PA.—We are informed that the following bids were received April 2 for a steel bridge on Buffalo Road: R. E. Briggs, Cy. Engr., advertised in Engineering News: West Va. Bridge & Construction Co., Wheeling, Va., $36,146; Mt. Vernon Bridge Co., Mt. Vernon, O., $35,200; Bellefonte Bridge & Iron Co., Bellefonte, O., $37,000; A. D. Young, Corry, Pa., $33,149; New Jersey Bridge Co., Monasquam, N. J., $32,900; Penn Bridge Co., Beaver Falls, Pa., $31,980; Owego Bridge Co., Owego, N. Y., $34,783; R. B. Willis, Erie, Pa., $28,010; Van Dorn Iron Works, Cleveland, O., $29,950. The above bids are for the completion of the work in six months. Alternate bids, however, were offered as follows: R. B. Willis, time, four months, $29,484; Mt. Vernon Bridge Co., nine months, $33,500; Van Dorn Iron Works, eight months, $27,000. This last bid was accepted and the contract awarded to that firm.

MORRISTOWN, PA.—The Schuylkill River bridge between Conshohocken and West Conshohocken is stated to have collapsed. The bridge has been in use for 66 years.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

PHILADELPHIA, PA.—The contract for a bridge on the line of Stopley St. over the tracks of the Richmond Branch of the P. & R. R. R. has been let to McGaw & Gray at $24,000.

PITTSBURG, PA.—It is stated that A. P. Boller, Cons. Engr. for the Pittsburg, Carnegie & Western R. R., has served notice on the river interests that if they insisted on the Wabash bridge, which is to be built across the Allegheny River near Fourth St., being elevated to a height of 70 ft., the improvement would be abandoned and the Wabash Railroad would not enter Allegheny.

DOVER, DEL.—The Kent County Levy Court has been considering the building of a new steel bridge over Silver Lake near Dover.

CUMBERLAND, MD.—Reports state that W. P. Le Fevre, C. E., will receive bids until April 15 for constructing a steel-beam concrete bridge at Flintstone, Md.

HAGERSTOWN, MD.—Reports state that the county is to build a 105-ft. bridge, to cost $2,300, at Beaver Creek.

WASHINGTON, D. C.—The following bids were received March 27 by Lieut.-Col. Charles Allen, U. S. Engr., for constructing a bridge over the Potomac River; advertised in Engineering News: (1) Scherzer Roller Lift Bridge Co., Chicago; (2) Pennsylvania Steel Co., Philadelphia; (3) Arthur McMullen, New York; (4) Penn Bridge Co., Sharon, Pa.; the itemized bids for the work are given under Contract Prices in this issue:

	1.	2.	3.	4.
Substructure:				
N. E. abutment.	$26,000	$32,000	$31,000	$31,000
Pier 1	23,000	33,600	33,620	31,000
" 2	*23,000	33,600	33,620	31,000
" 3	23,000	33,600	33,620	31,000
" 4	23,000	33,600	33,620	31,000
" 5	23,000	33,600	33,620	31,600
" 6	†29,000	41,000	41,360	42,300
" 7	43,000	41,000	41,360	42,300
Pivot pier (8)...	‡.....	52,000	52,110	55,000
Pile protection ..	20,000	23,000	22,000	21,000
Pier 9	41,000	41,000	41,900	42,300
" 10	28,000	41,000	41,360	42,300
" 11	26,000	37,000	37,320	37,000
" 12	26,000	37,000	37,320	37,000
S. W. abutment	31,000	41,000	40,000	31,000
Superstructure:				
Span 1	37,000	40,000	39,000	57,000
" 2	43,000	40,000	38,000	57,500
" 3	37,000	40,000	38,000	57,000
" 4	43,000	40,000	38,000	59,500
" 5	37,000	40,000	38,000	57,500
" 6	43,000	40,000	38,000	59,500
" 7	§48,500	40,000	38,000	59,500
Swing span (8)..	$158,000	115,000	107,000	136,600
Span 9	48,500	40,000	38,000	59,500
" 10	43,000	40,000	38,000	58,500
" 11	37,000	40,000	38,000	58,500
" 12	43,000	40,000	39,000	58,500
Total	‖$985,000	$1,109,000	$1,091,210	$1,315,300

*Alternate bid of $2,000(?).
†Alternate bid of $23,000.
‡Not required in plan.
§Alternate bid of $153,000.
‖Also bid (b) $980,000 and (c) $990,000.

The Scherzer Roller Lift Bridge Co. offered bids under two plans (a) and (b), on all the work, but the only cases in which these differed are noted above.

PARKERSBURG, W. VA.—A hearing was to be held in Cincinnati by the War Department on the plans for proposed Wabash bridge at this place. The plans provide for a structure of the cantilever type, duplicate of the bridges at Pittsburg and Mingo Junction. Its channel spans will be 650 ft. long, and the total bridge length, with the approaching viaducts, 1,500 ft. It will cost approximately $750,000, and is to be ready early in the summer of 1904. The bridge is to be used by the L. M. & P. R. R. J. T. Blair, Pres.

DECATUR, GA.—The supervisors have decided to build a new bridge to cost about $6,000 over Sangamon River at Coulter's Mills. The bridge is to be of iron with 150-ft. span. James Henson is a Supervisor.

JACKSONVILLE, FLA.—E. B. Pleasants, Ch. Engr., Atlantic Coast Line Railway, is about to ask for bids for a viaduct at Jacksonville.

CLEVELAND, O.—The Pennsylvania R. R. Co. is stated as desiring the construction of a viaduct at Reed Ave. at a cost of $100,000, to accommodate 18 additional railroad tracks.

COLUMBUS, O.—Bids are asked by the county commissioners until May 7 for the following bridge work: Substructure and superstructure of the Ranke and Gantz bridges, Jackson township; substructure and superstructure of the Price bridge, Pleasant; substructure and superstructure of the Graham bridge, Truro; substructure, superstructure, approaches and paving of the Hayden Run bridge, Norwich and Washington. L. E. Jones, County Auditor. Walter Braun, County Surveyor, who made the plans, writes us that this last bridge, is to be a three-span, two-riveted Warren trusses, 160 ft. centers and a camel-back pin-connected span, 252-ft. centers, with permanent roadways. The piers and abutments are to be very large and will either be all sandstone or sandstone and concrete. The total cost of the structure is $113,000. Mr. Braun also writes that the location is such that it would be an ideal place for the construction of concrete arches, as there is plenty of limestone within a short distance.

COSHOCTON, O.—It is stated that the county commissioners will soon call for bids for constructing new bridge over the Tuscarawas River at Newcomerstone.

DAYTON, O.—F. W. Turner, Cy. Engr., writes us that nothing will be done in reference to the construction of a bridge over the Missouri River at 3d St. until after the spring election.

DAYTON, O.—Bids are asked until April 25 for constructing 100 ft. long and 16-ft. roadway bridge over Wolf Creek. T. J. Kauffman, County Auditor.

EAST LIVERPOOL, O.—It is reported that J. E. McDonald has made application to the government for permission to build an iron bridge over the Ohio River opposite old West End Cemetery.

INDIANAPOLIS, IND.—The contract for 22 steel concrete arches for the Indianapolis & Northwestern Traction Co. has been let to the National Bridge Co., Indianapolis.

INDIANAPOLIS, IND.—Bids are asked by the county commissioners until May 1 for constructing bridge over Birch Creek near Southport.

SPENCER, IND.—Bids are asked until April 22 for erecting iron wagon bridge over White River. Geo. East, Secy. County Comrs.

BAY CITY, MICH.—Bids are asked by the Bay County Stone Road Commission until April 11 for constructing a bridge over dredge cut in Merritt township, one over the Kawkawlin River in Monitor township, and one over Squaconning Creek in Frankenlost township. Bloomshield & McCloy, Engrs., 300 Sheam Bldg., Bay City; John Buchanan, Clk.

GRAND RAPIDS, MICH.—The citizens of Kent county will vote on a proposition to issue $30,000 for constructing a new bridge at North Park.

CHICAGO, ILL.—Bids are asked until April 10 for reinforcing the west abutment of the Lake St. bridge. F. W. Blocki, Comr. Pub. Wks.

ELGIN, ILL.—The highway commissioners have decided to build three pile bridges this summer at a total cost of $1,500.

FORT SHERIDAN, ILL.—The contract for constructing a bridge here has been let to the Elkhart Bridge Co., Elkhart, Ind., for $3,530.

KEITHSBURG, IA.—The Iowa Central R. R. is reported to be planning to construct a new bridge over the Mississippi at Keithsburg.

ST. PAUL, MINN.—It is stated that 50 measures have been introduced in the state senate to appropriate sums varying from $300 to $5,000 for bridges and roads.

BEAVER CITY, NEB.—Bids are reported asked by the county commissioners until April 14 for the construction of a 300-ft. bridge over the Republican River at Edison, 16-ft. roadway. A 360-ft. bridge across the Republican River at Cambridge, 14-ft. roadway. Also repair of 90 ft. of the Republican River bridge at Holbrook. T. F. Newton, County Clk.

MADISON, NEB.—An election is to be held April 17 to vote $4,000 of bonds for replacing the bridge on the Elkhorn washed out by floods.

RED LODGE, MONT.—The construction of a bridge over Clarke Fork River at this place is under discussion.

HALLETTSVILLE, TEX.—Lavaca county votes May 2 on issue of $25,000 bridge and road improvement bonds.

HILLSBORO, TEX.—Reports state that the large iron bridge on Coba Creek south of this town has been washed out by recent floods.

HOUSTON, TEX.—A motion has been before the council requesting the city engineer to look into the practicability of a bridge over the bayou at the foot of Travis St.

ROBY, TEX.—It has been voted to issue $19,000 of bonds for bridge purposes.

SPOKANE, WASH.—The city council has offered to give $40,000 towards the proposed $86,000 structure over Latah Creek.——The trustees of chamber of commerce have addressed a memorial to Congress asking for the construction of a steel bridge across the Spokane River at Fort Wright. It is estimated that the bridge will cost $75,000.

LAKEVIEW, ORE.—Wm. Flackus has contract to build a bridge across the Klamath River at Keno for $1,600; also to repair the Wilson bridge on Lost River for $1,750.

BUILDINGS.

BEVERLY, MASS.—Bids are asked until April 15 for building school house. T. A. Holmes, Chn. Com. Kilham & Hopkins, Archs., 9 Park St., Boston.

BOSTON, MASS.—A site has been purchased by Siegel, Cooper & Co., New York, for $2,000,000, upon which a department store will be erected.

CAMBRIDGE, MASS.—A new philosophical building, costing $150,000, will probably be erected.

HOLYOKE, MASS.—Bids are asked by the building committee of St. Paul's church until April 18 for erecting church and parish-house. Wm. Towner, Arch., 137 Summer St., Boston.

NEW BEDFORD, MASS.—Bids are asked until April 15 for erecting high school building on County St. S. C. Hunt, Arch., 76 Pleasant St. C. S. Ashley is Mayor.

PEABODY, MASS.—Bids are asked until April 15 for erecting brick high school building. Separate bids for mason work and furnishing; carpenter work; plumbing and for heating and ventilating. A. E. Wells, Chn. Com. E. B. Balsomb, Neal & Newhall Bldg., Salem.

PROVIDENCE, R. I.—H. M. Brown, Chn. Bldg. Com., writes us that a site has not yet been decided upon for the new Chamber of Commerce building.

ALBANY, N. Y.—City Engineer Melins has completed the plans for the new police station, fire engine and public bath houses. Brick, stone and steel will be used.

BROOKLYN, N. Y.—The new school building on the site bounded by Hicks, Poplar and Middagh Sts., will cost $250,000.

BINGHAMTON, N. Y.—A new armory is contemplated.

CORNING, N. Y.—The new court house will be of buff brick, terra cotta and stone. Bids will be asked soon. J. F. Warner is Arch., Rochester.

LONG ISLAND CITY, N. Y.—The new Borough Hall will be located at this place.

NEW YORK, N. Y.—Bids are asked by Board Education, Park Ave. and 59th St., uptil April 13 for installing electric bell system, wiring, sanitary work and iron gates in various schools. C. B. J. Snyder, Supt. School Bldgs. The municipal building and terminal, as suggested by Mayor Low, would be 20 stories and cost $6,000,000.——The following bids were received for extending building No. 41 at the Navy Yard: J. B. & J. M. Cornell Co., $53,400; Snare & Triest Co., $55,212 and Ryan & McFerran, $52,737.——Plans are nearing completion for the reconstruction of the New York Central R. R. terminal. It is stated that the United States Realty & Construction Co. will receive the contract.——A new 12-story hotel, costing $750,000, will be built at 79th St. and Amsterdam Ave., for the Central Realty Co. D. R. Todd is Treas.——The Santos Co. will erect a 7-story office building at 91-3 Pine St. and 129-131 Front St.——Reports state that plans are being prepared for a store and office building at 109-113 Park Row and 1-5 New Chambers St. for J. H. Spellman.

NEW YORK, N. Y.—Plans have been filed by H. T. Howell, Arch., 138th St. and Third Ave., for 6-story brick flat, 100 × 89 × 86 ft., at 355-361 West 125th St., for the McCormack Co., 50 West 127th St., at cost of $160,000; by G. F. Pelham, Arch., for a 6-story brick tenement at 77-9 Second Ave., for A. Silverson, at cost of $55,000; by Bernstein & Bernstein, Archs., for a 6-story brick tenement at 214-16 East Houston St., for Friedman & Fineberg, at cost of $55,000; by Bernstein & Bernstein, Archs., for two 6-story brick tenements, 37 × 90 ft., at 506 to 510 East 13th St., for R. Friedmann, at cost of $70,000; by Bernstein & Bernstein, for a 6-story brick tenement, 25 × 90 ft., at Rivington and Orchard Sts., for R. Wallach, at cost of $50,000; by Bernstein & Bernstein, for 6-story brick tenement, 50 × 87 × 44 ft., at Clinton and Broome Sts., for M. Weinstein, at cost of $45,000; by H. Lucas, Arch., 1133 Broadway, for 12-story brick hotel, 75 × 79 ft., at 49th St. and Madison Ave., at cost of $600,000; by G. F. Pelham, for 6-story brick flat, 47 × 76 ft., at 138-140 Ludlow St., for A. Newmark, at cost of $48,000; by C. B. J. Snyder, Arch., 500 Park Ave., for 4-story school, at 145th-146th Sts. and Willis Ave., at cost of $250,000; by H. Traumbauer, Arch., Philadelphia, Pa., for a 5-story brick building, 42 × 95 ft., at 1-3 East 62d St., for A. T. Drexel, 636 Fifth Ave., at cost of $100,000; by H. B. Mulliken, Arch., 7 East 42d St., for 12-story brick hotel, 99 × 102 ft., for Central Realty Co., 900 Seventh Ave., at cost of $750,000; by Horenburger & Straub, Archs., 122 Bowery, for 6-story brick tenement, 54 × 84 ft., at 805-809 East Fifth St., for S. Michelson, 353 East Third St., at cost of $45,000.

NEW YORK, N. Y.—Bids are wanted by the Board of Education, Park Ave. and 59th St., until April 20, for the general construction of an addition to the Tremont school, on East 21st St., and for installing electric light wiring and fixtures and making alterations and improvements in various schools and for the general construction of new school 84 on Albert St., Borough of Queens. C. B. J. Snyder, Supt. Schools.

NEW YORK, N. Y.—Bids are asked until April 30 for furnishing supplies, furniture, appliances, etc., for hospital at Mountain Branch, N. H. D. V. S., near Johnson City, Tenn. M. Harris, Gen. Treas., 346 Broadway.

ROCHESTER, N. Y.—The Bevier Memorial Building of the Mechanics Institute will be erected on the corner of Washington and Spring Sts.——The armory site committee has recommended the purchase of the Salyerds site on North St. for $62,000.

JERSEY CITY, N. J.—The Erie Ry. Co. will soon start work on new terminal. It is proposed to build five new ferry slips at foot of 12th St.

ALLENTOWN, PA.—Ritter & Smith received the contract for erecting the 3-story brick and stone Muehlenberg College for $70,000. N. E. Rhue is Arch., 12 North 6th St.

ALLEGHENY, PA.—J. E. & A. L. Pennock, 305 Walnut St., Philadelphia, received the contract for the new brick and steel fireproof Allegheny General Hospital, for $600,000.

LANCASTER, PA.—C. E. Urban, Arch., Woolworth Bldg., is preparing plans for a new 3-story brick and stone girls' high school, costing $100,000.

PHILADELPHIA, PA.—The Central Trust & Savings Co. have approved the plans for their new $60,000 building at Fourth and Market Sts.——W. L. Dockstader will soon erect a new $100,000 theatre on Market St.——Doyle & Doah, 1509 Sansom St., received the contract for the foundations for Jefferson Hospital building at 10th and Sansom St., for $99,500.——A marine arsenal will be built on Broad St. and Washington Ave. at cost of $150,000.

LUZERNE, PA.—Bids are asked until April 18 for constructing a fireproof addition to Luzerne County Prison. McCormick & French, Archs., Laning Bldg., Wilkesbarre.

SCRANTON, PA.—The Young Women's Christian Association will have a $200,000 building.

BALTIMORE, MD.—G. E. Haskell, Arch., Central Savings Bank Bldg., is preparing plans for 3-story brick and stone addition to hospital of the University of Maryland.——Architect Levi has completed the plans for Rosenstock & Co.'s new store building. Bids will soon be asked.

WASHINGTON, D. C.—F. F. Schneider, Arch., Bond Bldg., is preparing plans for a 7-story brick and steel fireproof apartment house, costing $200,000, for F. H. Durdey. Heating and electric plants to be installed.

FORT MYER, VA.—Wood, Down & Denning, Archs., Washington, D. C., are preparing plans for the 2-story brick gymnasium and Post Exchange, 70 × 120 ft., costing $125,000.

RICHMOND, VA.—Competitive plans are being prepared for the new $80,000 Beth Ahaba Synagogue.——The new Second Baptist Church will be located at Adams and Franklin Sts. and cost $70,000.

MORGANTOWN, W. VA.—A 10-story office building will be erected.

HUNTINGTON, W. VA.—J. Knox Taylor, Supervising Arch., Treasury Dept., Washington, D. C., is preparing plans for the new 3-story brick and steel fireproof post office, costing $150,000.

MOUNDSVILLE, W. VA.—Bids are asked until April 14 for stone and cement extension, 127 × 48 ft., to North Hall of the West Virginia Penitentiary. Cost estimated at $85,000 including equipment. C. E. Haddon, Warden.

GREENSBORO, N. C.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until May 5 for constructing U. S. court house, post office, etc., except heating apparatus.

CHARLESTON, S. C.—The Bureau of Yards and Docks, Navy Dept., Washington, D. C., received the bids of J. T. Snelson Construction Co. for constructing Quarters "G," for (1) $9,000 and (2) $7,803. Being in excess of appropriation, will probably be rejected.

CHICKAMAUGA, GA.—N. Ittner, Atlanta, received contract for erecting the army post hospital, for $59,472.

SAVANNAH, GA.—An 8-story hotel will be erected on the Gilmer-Minis property, State and Bull Sts., at cost of $300,000. C. H. Dorsett is interested.

WARRINGTON, FLA.—Bids are asked until April 20 for constructing administration building, bachelor officers' quarters, etc., at Fort Barrancas. W. E. Cole, Q.M.

GAINESVILLE, FLA.—The government building will be located on the Oak Hall property, donated by J. M. Graham and B. F. Hampton.

JACKSONVILLE, FLA.—E. D. Ryerson, Govmnt Arch., has prepared plans for the addition to the government building. The appropriation is $240,000.

BATON ROUGE, LA.—Bids are asked until April 15 for erecting a 5-story hotel. Address F. I. Raymond or W. L. Stevens, Arch., New Orleans.

NASHVILLE, TENN.—A $1,000,000 office building is contemplated.

CHAGRIN FALLS, O.—Knox & Elliott, Archs., Mercantile Bank Bldg., Cleveland, have plans for the East Ohio Traction Co.'s 1-story, 70 × 150 ft. car barns.

CINCINNATI, O.—M. N. Silberberg is having plans prepared for a brick, steel and marble theatre.

COLUMBUS, O.—The site for the new County Memorial building is being discussed. W. H. Knauss is interested.——St. Paul's Episcopal Church will be 108 × 72 ft., of gray limestone and cost $60,000. Bids will soon be asked. F. A. Packard, Arch., Hayden Bldg.——The Columbus Savings & Trust Co. will erect a 12-story stone, steel and pressed brick fireproof building, 62 × 187 ft. E. J. Smith is interested.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

CLEVELAND, O.—Bids are asked until April 20 for erecting a school building on Doan St. Starr Cadwallader, School Dir., Rose Bldg.——The Erie passenger station will be remodeled. Plans have been approved by Vice-President Willard.

FINDLAY, O.—The new station will be on Massachusetts Ave. and cost $4,000,000. D. H. Burnham, Arch.

TOLEDO, O.—Rabbit & Sons received the contract for the Huron Building Co.'s new building on Jefferson Ave., for $60,000. E. O. Faills, Arch., "The Nasby."——Miller & Conrad received the contract for erecting the new stone academy of the Notre Dame Sisters, for $75,000.——Bids will soon be asked for erecting the new parochial school of St. Hedwig's Catholic Church, costing about $50,000.

ALEXANDRIA, IND.—Bids are asked until April 13 for erecting new high school building. A. F. Sala, Secy. Bd. Education. Kramer & Harpster, Archs., Findlay, O.

GREENCASTLE, IND.—Competitive plans will be received by the court house construction board of Putnam county until April 20 for a court house building of Bedford limestone, fireproof, and costing about $130,000. Peter F. Stoner, County Audr.

INDIANAPOLIS, IND.—Bids will soon be asked for the new Short Ridge High School and the Irvington Ward School.

LAPORTE, IND.—B. Lavey, Chicago, will erect summer and club houses on Holme's Island in Pine Lake.

MICHIGAN CITY, IND.—Bids will be asked in a few weeks for erecting St. Anthony Hospital.

INDIANAPOLIS, IND.—D. A. Bohlen, Arch., Majestic Bldg., has completed plans for a new Catholic church. Father Carrier has charge of the matter.

RICHMOND, IND.—The contract for erecting the new federal building will be let this year.

SHELBYVILLE, IND.—Bids will soon be asked for erecting a $40,000 city hall. Address City Clerk.

TELL CITY, IND.—Plans are being prepared for a Carnegie library. Address Town Board.

CORUMA, MICH.—A new court house is being discussed at cost of $75,000.

DETROIT, MICH.—N. Wardrop, Arch., has completed plans for a 4-story manufacturing building of mill construction for the Pioneer Woolen Mill. Heine safety boilers, Corliss engine and Westinghouse dynamo will be required. P. S. Werkley is Pres.

FT. BRADY, MICH.—Bids are asked until May 4 for constructing two double brick barrack buildings. W. H. Miller, Q. M.

PONTIAC, MICH.—A new court house will be voted upon next month.

DWIGHT, ILL.—Plans have been completed for a 2-story office building, 66 × 128 ft., fireproof, for the Keeley institution. J. Barnes, Arch., 171 La Salle St., Chicago.

SULLIVAN, ILL.—W. F. Benson, Peoria, received the contract for erecting the 2-story brick and stone Masonic home, which will be 45 × 145 ft. and cost $37,000. B. Brandt, Arch., Chicago.

AMES, IA.—C. E. Atkinson received the contract for erecting the additions to the Iowa State College for $53,752.——The Elks lodge will erect a club house and lodge building, to cost about $50,000, on West Fifth St. Hallett & Rawson, Archs., 615 Walnut St.

CENTERVILLE, IA.—W. M. Peatman has the contract for the new $100,000 court house. Proudfoot & Bird, Archs., Crocker Bldg.

FAIRFIELD, IA.—An armory is contemplated.

GREENFIELD, IA.—Bids are being received for a new jail and sheriff's residence.

MASON CITY, IA.—The Chicago & Great Western Ry. may build a $40,000 passenger depot and spend $30,000 on improvements in the yard.

ROCKFORD, IA.—The new court house will cost $80,000.

LE SUEUR, MINN.—Bids are asked until May 1 for erecting a school. Chas. C. Kolars, Clk. Bd. Education.

TWO HARBORS, MINN.—T. E. Evans, Village Recorder, writes us that Pastoret & Lunz received the contract for stone building for $22,450.

MINNEAPOLIS, MINN.—F. Overholt, Mech. Engr., writes us that Wm. Donaldson & Co.'s brick and steel store, 100 × 166 ft., will require one 250 and one 500-HP. direct connected Corliss engine, 150 and 300-KW. electric generators, two 120 Ideal engines, direct connected, 75-KW. Western generator, six 66 × 18-in. tubular boilers, 3 Otis elevators, 3 Geiger Fisk elevators and 3 Hale elevators. Estimated cost, including equipment, is $400,000.

ST. PAUL, MINN.—The P. N. Peterson Granite Co. will erect a 3-story building, 50 × 150 ft., costing $45,000.

FORT LINCOLN, N. D.—Bids are asked until April 30 for constructing buildings at Fort Lincoln. Geo. E. Pond, Ch. Q. M., St. Paul, Minn.

TONGUE RIVER AGENCY, MONT.—Bids are asked by W. A. Jones, Indian Comr., Dept. of the Interior, Washington, D. C., until April 30, for erecting various buildings at the Tongue River Agency.

KANSAS CITY, MO.—W. H. Collins will erect an apartment house, 40 × 110 ft. at 917-19 Locust St., at cost of $50,000.——L. N. Leslie will erect an 8-story flat at 1011 Jefferson St., at cost of $60,000.

ST. LOUIS, MO.—The Wabash Ry. Co. will erect a large freight depot on the site bounded by Carr, Collins and Third Sts. and Franklin Ave.

BEAUMONT, TEX.—Plans by the following architects are being considered for the new high school building: A. A. Watson, Austin; H. N. Jones, Houston; S. B. Herbert and G. Walker, Waco; H. P. Kaufman, J. A. Etler and M. A. Graf, Beaumont. The cost is estimated at $65,000.

EL PASO, TEX.—The El Paso Union Depot Co. will erect a union depot at cost of $150,000.

SAN ANTONIO, TEX.—The International & Great Northern Co. proposes to erect a $100,000 passenger depot.

TIMPSON, TEX.—An effort is being made to have the East Texas Baptist College erected at this place at cost of $50,000.

DENVER, COLO.—McGarth & Stewart received the contract for erecting W. Mahar's $68,000 apartment house.

SEATTLE, WASH.—Bids are asked until April 23 for constructing one double set of captains', lieutenants' and commissioned officers' quarters at Fort Lawton, Wash. G. S. Bingham, Q. M. U. S. A.

UNION, WASH.—The school board will erect a new 2-story school building at cost of between $40,000 and $50,000.

PORTLAND, ORE.—Judge L. B. Stearns writes us that his store building will be 100 × 70 ft., of brick and will have steam heat, combined freight and passenger elevator, gas and electric lighting and cost $50,000. Contract will probably be let in April. Whidden & Lewis, Archs., Concord Bldg.

LOS ANGELES, CAL.—The labor people will erect a new temple, costing about $75,000. Plans are being drawn for a temple with a seating capacity of 5,000.

RENO, CAL.—Reports state that Frank Golden will erect a $50,000 brick building on Center St.

SAN BERNARDINO, CAL.—The Maccabee Building Assn. will erect a 5-story building.

SAN FRANCISCO, CAL.—Hamilton Church will erect a $40,000 edifice on Waller and Belvedere Sts. Rev. C. O. Okham is pastor.

SAN FRANCISCO, CAL.—Bids are asked until April 24 for installing hot water heating plants at Fort Miley and Fort Baker. C. P. Miller, D. Q. M. G.

OGDEN, UTAH.—The Masonic Lodge contemplates the erection of a new home, to cost about $60,000.

SALT LAKE CITY, UTAH.—D. C. Dart, Arch., 225 Atlas Blk., has prepared plans for a 6-story building on Second South St.——G. F. Peabody will donate $25,000 for erecting the Y. M. C. A. building, provided $50,000 additional is raised by May 1.

BOISE, IDAHO.—The Odd Fellows lodges propose to construct a temple to cost $100,000. Pressed brick trimmed with stone will be used.

WINDSOR, N. S.—Bids are asked until April 14 for constructing hospital building. J. C. Geldert, Town Clk.

ATHENS, ONT.—Bids are asked until April 15 for erecting a town hall building. B. Loverin, Village Clk.

BERLIN, ONT.—A new municipal building will probably be built. H. Aletter is Town Clk.

NORTH BAY, ONT.—Bids are asked until April 20 for erecting a Presbyterian church at North Bay. Address J. Francis Brown, Arch., Toronto.

TORONTO, ONT.—The Toronto Stock Exchange will probably erect a building on Yonge and Wellington Sts. Address Secretary.——The Trade Council will probably erect a $50,000 labor temple.

MONTREAL, QUE.—The Eastern Townships Bank will erect a new bank at St. James and McGill Sts. Address General Manager.

WINNIPEG, MAN.—The Zion Methodist Church will build a $45,000 edifice on Pacific Ave. Address Rev. H. Wigle, B. A.

MOUNT BAKER, B. C.—Plans are being prepared for a new hotel on the site of the old one, to cost $50,000. Address Manager Virtue.

BONDS.—Boise, Idaho, will issue $43,000 for equipment of armory and gymnasium at University of Moscow.——Minneapolis, Minn., will issue $400,000 for court house.——At the election this month, Lima, O., will decide upon an issue of $75,000 school bonds.——An election will soon be called by Lewistown, Mont., to vote upon bonds for $30,000 for high school building.

WATER SUPPLY AND IRRIGATION.

(For foreign water supply and irrigation see under "Foreign Contract and Export News.")

DEXTER, ME.—Reports state that the water commissioners have called for bids from six firms until April 15 for furnishing iron pipe for a water works system, the estimated cost of which is $48,000. F. L. Fuller, 12 Pearl St., Boston, Mass., is Des. Engr.

BRUNSWICK, ME.—H. J. Givens, Secy. Bd., writes us that Brunswick has accepted the bill as passed, giving the town the right to maintain municipal works.

GARDINER, ME.—Immediate steps are to be taken for purchase by city of works of Maine Water Co.

PROCTOR, VT.—Town has voted to improve water system at cost of $25,000.

COCHITUATE, MASS.—Improvement of water reservoir at cost of $2,000 considered.

LEICESTER, MASS.—Extension of water system down Rawson St. may be made.

MELROSE, MASS.—We are informed that contracts for cast iron pipe for proposed extension of city water works has been let to the U. S. Cast Iron Pipe & Foundry Co., Chicago, Ill. The contract for hydrants and valves was let to M. J. Drummond & Co. W. Dabney Hunter, Engr. and Supt. Pub. Wks.

QUINCY, MASS.—C. F. Knowlton, Comr. Pub. Wks., referring to a report that $30,000 had been appropriated for water works extensions, writes us that the city buys the pipe and does the work by city labor whenever extensions are made. The $30,000 is a yearly appropriation and is not for anything in special improvement.

ROCKPORT, MASS.—John Tarr, Secy. Water Comrs., writes that they are at present considering the best method of filtration, working on the basis of plant of 1,000,000 gallons capacity. Nothing definite, however, has been done nor can an exact date be set when a decision will be made.

SHIRLEY, MASS.—We are informed that the matter of the proposed $35,000 water works for this place is in the hands of F. L. Fuller, Engr., 12 Pearl St., Boston, Mass., who is preparing for bids. F. D. Weeks, Chn. Comrs.

UXBRIDGE, MASS.—Gideon M. Aldrich is member of a committee which will soon report on a water supply for this place.

WHITMAN, MASS.—We are informed that nothing was done at annual town meeting toward securing a water supply and that it may be some time before the matter is taken up again. Geo. D. Soule, Chn. Selectmen.

HARTFORD, CONN.—Resolutions before the legislature appropriates $7,500 for water supply at Fitch's Home for Soldiers.

NORWALK, CONN.—Bids are asked until April 22 for hauling and laying 16-in. supply main—about 25,000 ft. in all—as is stated in our advertising columns. Frederick Buckley, Secy. Water Comrs.

BROOKLYN, N. Y.—According to reports plans just commenced by engineers of the department of water supply, gas and electricity provide for the addition of about 40,000,000 gallons of water per day to the present supply of this city. Robt. Van Iderstine is Deputy Comr.

FORT TOTTEN, N. Y.—The contract for constructing a water system here has been let to Charles Cooke for $7,000.

GREENPORT, N. Y (L. I.)—This place is stated to be seeking a new source of water supply. Capt. Isaac Reeves is Pres. Village Trus.

NORTHPORT, N. Y. (L. I.)—The Northport Water Co. will, it is said, drive several wells for a new source of supply.

HUDSON, N. Y.—H. K. Bishop, Supt. Pub. Wks., writes us that a bill is now before the legislature to bond the city for $255,000 to build an extension to the water system, the work to be carried on by a commission of six.

PLATTSBURG, N. Y.—H. H. Rogers, Supt. W. W., writes us that the city expects to spend $15,000 this year in changing present cement lines to iron. The work is to be done by the city. The total estimated cost of the change is $40,000. H. M. Geer, Ballston, N. Y., is the Des. Engr.

POUGHKEEPSIE, N. Y.—It is stated that Fred. S. Lake, as referee, will sell at public auction, May 8, the plant of the Fishkill & Matteawan Water, to satisfy a foreclosure made by the Central Trust Co. of New York. According to the terms no bid will be received for less than $85,000. Everything owned by the company is to be sold.

SCHENECTADY, N. Y.—This city has planned to spend $318,000 in making water extensions this season.

WATERTOWN, N. Y.—This city has recently voted to build a mechanical filtration plant to cost $100,000. Jno. C. Knowlton, Pres. Water Bd., writes us that plans for this plant are in the hands of Allen Hazen, C. E., 220 Broadway, N. Y., and that it will be some months before bids are called.

ATLANTIC CITY, N. J.—Bids are asked until May 5 for installing a plant, pumping 3,000,000 gallons a day from 12 artesian wells, as is more fully described in our advertising columns. Plans and specifications for the work are on file at office of Engineering News. Kenneth Allen, Engr. and Supt. W.-W.

FRACKVILLE, PA.—John Haupt writes us that the water plant owned by the Haupt Water Co. has been purchased by Joseph J. Kehler. Improvements are to be made during the summer.

McKEESPORT, PA.—The water commissioners have voted to expend $10,000 for extending the intake water main.

PHILADELPHIA, PA.—It is stated that the University of Pennsylvania is to at once have an extensive filtration plant constructed in the basement of the dormitory building.

SCRANTON, PA.—The Campbells Ledge Water Supply Co. has been incorporated with $1,000,000 capital to supply this city with water from the Susquehanna River. Surveys have been made for the pipe route and it is proposed to build a reservoir on Campbells Ledges, five miles from the city, into which the water will be pumped from Ramsone. J. F. Eichholzer, Pittston, Pa., is Pres.

BALTIMORE, MD.—The Baltimore County Water & Electric Co. has made a proposition to city whereby the latter will acquire the mains and franchises in streets west of Gwynns Falls. The sum of $225,000 has been appropriated for this purchase and the laying of new mains in that section.

SALISBURY, MD.—We are informed that the extension of the private water company will take about 4,000 ft., 4 and 6-in. pipe, specials, mains, hydrants. The proposed cost is $10,000 and company men do all the work. L. D. Bell, Gen. Mgr.

WASHINGTON, D. C.—Contracts for the filtration plant have been let as follows: 880 cu. yds. excavation and 111,200 cu. yds. concrete masonry, Cowardin, Bradley, Clay & Co., Richmond, Va., $989,694; 1,100 tons cast-iron pipe and specials, 3,000 ft. riveted steel pipe and drainage system, Brennan Construction Co., Washington, D. C., $225,535; 140,200 cu. yds. filter sand, 42,300 cu. yds. cut filter gravel, L. E. Smoot, Washington, D. C., $487,855.

LYNCHBURG, VA.—W. C. N. Randolph, Jr., Supt. W.-W., writes us that an expert has been employed to go over the plans, route, etc., with H. L. Shaner, Cy. Engr., of the proposed gravity supply from Pedlar River.

SHENANDOAH, VA.—This city, through G. D. Adelsberger, Engr., 722 Pennsylvania Ave., Baltimore, Md., is stated as wanting correspondence relative to granting franchise for construction of water-works.

HINTON, W. VA.—H. G. Marcy, Wilkesbarre, Pa., and others are stated to have purchased the local water works for $51,000, with the intention of extending the main supply pipe two miles to Greenbrier River. R. H. Peterson is Mgr.

WHEELING, W. VA.—The water works trustees have been considering the extending of the water mains the full length of the town and making them of uniform size. This work would cost about $90,000, and it is also proposed to spend $150,000 for a new reservoir.

ATLANTA, GA.—R. M. Clayton, Cy. Engr., has been urging the necessity of improving the water works system. He states that 51 per cent. of the total street mileage is without water mains. He also states that the city imperatively needs a new 15,000,000 gallon pumping, a new reservoir and the construction of a new 30-in. main.

COLUMBUS, GA.—W. S. Greene, C. E., Receiver Columbus Water Works Co., writes us that they are putting in pumps to aid the gravity system and are adding a Jewell filter to use river water if necessary. No contracts as the company does its own work. Pipe, valves, etc., bought from Birmingham, Ala. A. E. Boardman, 62 Wall St., New York, was Des. Engr.

COLUMBUS, GA.—J. L. Ludlow, Cons. Engr. Winston-Salem, N. C., has been engaged to make the necessary surveys for a new water works system.

SMITHVILLE, GA.—Bids are reported asked until April 15 for sinking artesian well; size of piping to be not less than 4 ins. C. A. Rhodes, Mayor.

FORT MORGAN, ALA.—Bids are asked until April 25 for sinking artesian well at Fort Gaines, Ala. A. D. Morgan, Q. M. Fort Morgan.

JASPER, ALA.—A franchise for water works has been granted to Jack Crawford and associates, and they will put in a $30,000 system.

BILOXI, MISS.—The contract for extending the water works system has been let to Kirkpatrick & Johnson, Jackson, Tenn.

NASHVILLE, TENN.—The Board of Health has recommended the removal of the city water supply intake at a cost of $60,000. J. M. Head is Mayor.

BARBERTON, O.—Council committee has investigated the matter of municipal work. It has been estimated that 2,000,000 gallon plant could be installed for $23,230.

CANTON, O.—About two miles of water main extensions are to be made this year and the superintendent of water works is to at once make an estimate on the probable cost.

MILFORD, O.—Bids are reported as asked until April 10 for water-works, to cost about $25,000. Mayor J. K. Buckingham.

CLINTON, IND.—Mayor D. C. Johnson writes us that plans were to be submitted to the council April 6 for new water works. Two sessions of the council will be required and the contracts will probably be let in 45 or 60

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

days. The source of the new supply is from wells 60 ft. deep and the probable cost of the work is $45,000. A. F. Maltby, Fisher Bldg., Chicago, Ill., is Des. Engr.

OAKLAND CITY, IND.—We are informed that bids will be opened April 20 for the following material, etc., for the proposed municipal water works; A. H. Kennedy, Rockland, Ind., Des. Engr.: A 12 × 18 duplex pump and connections, a 5-ft. × 16-ft. tubular boiler, 60,000 gallon steel water tower, 100 ft. high, 4½ miles 4, 6, 8 and 10-in. pipe and specials and 35 hydrants. Louis Deutch is Mayor.

VALPARAISO, IND.—K. H. Loring, Cy. Atty., writes us that the city holds an option to purchase the water plant owned by the Valparaiso City Water Co., but being unable to furnish the money to make the purchase it proposes to sell to a private corporation under contract to purchase the option.

AGRICULTURAL COLLEGE, MICH.—Bids are asked until April 14 for constructing water-works distributing system at this place, as is stated in our advertising columns. A. M. Brown, Secy. State Bd. Agriculture.

GRAND RAPIDS, MICH.—Barney Meyer, Gen. Supt., writes us under date of April 4 that nothing is definite about extension of water system as yet.

NILES, MICH.—The city is said to be considering the adoption of the meter system. John A. Cavanaugh is Supt.

CRETE, ILL.—Village proposes to install works at cost of $10,000.

ELGIN, ILL.—The lowest bid for finishing the work of tunnel construction for the Elgin water works was received from John J. O'Heron, Chicago, Ill., they offering to do the work for $24,165.

PROPHETSTOWN, ILL.—We are informed that the Iowa Engineering Co., C. P. Chase, Mgr., Clinton, Ia., have completed plans for the water works at Phophetstown and they are now in the hands of the city officials of that place.

APPLETON, WIS.—The Appleton Water Works Co. has offered to sell its plant to the city for $315,000. The citizens will probably vote on a $280,000 bond issue for a new system.

CHETEK, WIS.—Mayor O. E. Miller writes us that the city wishes to expend about $5,500 for water works, to consist of steel tower, gas engine, pump and as much pipe as can be laid with money at their disposal. No date has been set for opening bids as nothing will be settled definitely until the money has been secured.

AMES, IA.—The Chicago & Northwestern Railway Co. is stated to be preparing to erect a water purifying plant at Ames.

BODE, IA.—Works to be voted on.

HOPKINTON, IA.—The contract for water-works has been let to the Des Moines Bridge & Iron Works, Des Moines, for $6,970.

MASON CITY, IA.—It is reported that this city will build a new water supply reservoir.

NEWTON, IA.—B. J. Engle, Secy. Business Men's Association, writes us that the city is desirous of putting in water mains to Skunk River, six miles distant, and wants a company or some concern to take contract.

SILVER CITY, IA.—Mayor M. E. Haffaher writes us that no legal steps have been taken by the city council in the matter of water works and probably none will be taken this year.

SIOUX CITY, IA.—We are informed that reports on the extension of the city water works system will be made April 10. J. M. Lewis, Cy. Engr.

DULUTH, MINN.—Bids are asked by the water and light commissioners until April 10 for laying about 85,000 ft. water mains and 4,100 ft. gas mains.

TOPEKA, KAN.—The Topeka Water Co. has submitted to the council a proposition for a reduction of the water rates. The offer gives the city the right to buy the plant every ten years if the city does not vote to buy at the coming election. The company also agrees to extend the mains six miles the first year and afterwards two miles per year. Albert Parker is Mayor.

ELMWOOD, NEB.—Village may extend mains. J. H. Rogge is Clk.

MILLIGAN, NEB.—Works to be voted on.

WAYNE, NEB.—T. H. Fritts, Mgr., Municipal W.-W., writes us that they have not decided as to what changes will be made in extending the old water works system. Some decision will probably be reached by May 15. The source of the new supply is to be from wells. Population, 2,500.

ABERDEEN, S. DAK.—D. Cuyler Washburn, Cy. Engr., writes us that the water main extensions will require about 75 tons cast iron pipe, mostly four and six-inch. About two miles of mains will be laid.

HURLEY, S. DAK.—Estimates for municipal works have been made, to be put in at a cost of $5,000.

MARION, S. DAK.—$5,000 works to be voted on.

CHEYENNE, WYO.—The Big Horn Development Co. has been formed to construct a storage reservoir, with a capacity of 70,000,000 cu. ft., near the headquarters of the Shoshone River. An 80-mile irrigation canal will be dug and some 250,000 acres of land lying in Big Horn county will be reclaimed. A. B. Fowler, Guernsey, is Supt.

CHEYENNE, WYO.—Bids are asked until May 8 for extending the present water system at Fort D. A. Russell, Wyo., as stated in our advertising columns. Capt. W. S. Scott, Constructing Q. M.

CHINOOK, MONT.—Works voted on.

GREAT FALLS, MONT.—The contract for $20,000 worth of cast-iron pipe for the city water mains has been let to the Great Falls Iron Works.

MILES CITY, MONT.—L. P. Wolff, Hydr. Engr., 1st National Bank Bldg., St. Paul, Minn., has been engaged to look into the proposed enlargement of the water works.

CAMERON, MO.—It is stated that this city will have an $80,000 system of works. O. M. Young is Mayor.

KANSAS CITY, MO.—Bids are asked until April 20 for the construction and installation of one vertical and one horizontal triple-expansion condensing crank and flywheel pumping engine, one horizontal triple-expansion condensing pumping engine, 12,000,000-gallons pumping capacity; bids will also be asked on same kind of engine of 10,000,000-gallon capacity, pumping engine, 25,000,000 gallons, to be erected on foundations provided by city, all of which work is fully described in our advertising columns. Baxter Brown, Secy. Bd. Pub. Wks.

KANSAS CITY, MO.—Bids are asked by the board public works until April 15 for labor and material for constructing 68,000 ft. 36-in. cast-iron pipe, 18,000 ft. 48-in. and 36-in. steel-riveted and calked pipe line, and 18,000 ft. 66-in. concrete and steel aqueduct, as is stated in our advertising columns. Baxter Brown, Secy. Bd. Pub. Wks.

ELGIN, TEX.—Works voted for; cost, $16,500.

MT. PLEASANT, TEX.—The contract for a waterworks plant here has been let to the McQuatters Plumbing Co., Hillsboro, for about $20,000.

EL RENO, OKLA.—City works favored.

LAWTON, OKLA.—The matter of water works, which has lain dormant since Governor Ferguson rejected the contract for their construction, will probably be taken up again after the city election.

VINITA, IND. TER.—Geo. W. Bayne and others have secured a franchise for works here.

DENVER, COLO.—A bill has been before the legislature appropriating $50,000 for state irrigation work.

FLORENCE, COLO.—The Fremont Mining & Development Co. will, it is said, begin work in June on the construction of reservoir five miles this side of Victor. The reservoir is to have a capacity of 320,000,000 cu. ft.

NORTH YAKIMA, WASH.—Allen & Mathison of this city are stated to have secured a sub-contract, amounting to about $50,000, for constructing two miles of the irrigation canal at Shoshone Falls, Idaho.

SEATTLE, WASH.—The lowest bidder for laying water mains in 13th Ave., etc., was F. McLellan, his bid being $41,868.

SPOKANE, WASH.—Council has passed ordinance appropriating $33,000 for constructing stand-pipe south of Highland Ave.

SUMAS, WASH.—Works proposed.

WALLA WALLA, WASH.—The council water committee has reported in favor of a gravity system of water works from Thomas Springs to cost $100,000. The estimates of the committee for the high pressure pipe service are as follows: 16-in. pipe, 3,620 ft.; 12-in., 1,110 ft.; 10-in., 3,502 ft.; 8-in., 3,877 ft.; 6-in., 25,294 ft.; 4-in., 2,658 ft.

ADAMS, ORE.—Estimates for municipal works to cost $5,000 are being made.

HOOD RIVER, ORE.—The Hood River Electric Light & Power Co., according to reports, is to put in a water system.

PORTLAND, ORE.—The city council is to consider the matter of water supply for St. Johns district.

THE DALLES, ORE.—T. J. Senfest, Pres. Bd. Water Comrs., writes us that the city contemplates the issue of $50,000 of bonds for a 7½-mile gravity extension of the works. Nothing, however, can be done until the taxpayers vote on the matter in June.

LEWISTON, IDAHO.—Bids are asked until April 10 for the construction of a reservoir, which, according to reports, is to be 120 ft. in diameter and 15 ft. deep. C. L. McDonald, Cy. Clk.

ST. THOMAS DE MONTMAGNY, QUE.—Joseph Mihnault is to make plans and specifications for water-works and a drainage system. P. O. Quebec, Que.

GANANOQUE, ONT.—City may vote on constructing $100,000 works.

KINGSTON, ONT.—Filtration plant considered.

OTTAWA, ONT.—The contracts for cast-iron pipe, amounting to $15,960, and for hydrants and valves, has been let to Thos. Lawson. The contract for brass work was let to McKinley & Northwood, at $1,672.

TORONTO, ONT.—Bids are asked by Mayor Urquart until April 15 for laying and joining water pipes for 1903.

BONDS.—Norwalk, Conn., by Chas. L. Glover, Mayor, is asking for bids until May 18 for $80,000 water works improvement bonds.——Hudson, N. Y., is asking leave to issue $255,000 water works extension bonds. See item elsewhere in this column.——Ilion, N. Y., has voted on issue of $69,000 bonds for enlarging water works.——Griffin, Ga., will vote on issue of $100,000 water and light plant improvement bonds.——Knoxville, Tenn., has bill before legislature to permit of issuing not more than $750,000 of bonds for purchase of water works.——Steubenville, O., voted April 6 on issue of $75,000 water works bonds.——Appleton, Wis., will vote on $280,000 bond issue for water works.——Nushwauk, Minn., has voted $25,000 bonds for works.——Milligan, Neb., may vote on bond issue for water works.——Hurley, S. Dak., is likely to vote on $5,000 of bonds for water works construction.——Marion, S. Dak., may vote on $5,000 water works construction bonds.——Chinook, Mont., voted April 6 on $25,000 bond issue for constructing works.——Colorado Springs, Colo., voted April 9 on issuing $56,000 water bonds, $24,000 sewer bonds and $30,000 bridge and viaduct refunding bonds.——Sumas, Wash., may vote on bonds for works.——Walla Walla, Wash., will vote on bond issue, probably $125,000, for water works.——Charlottetown, P. E. I., will issue $19,000 bonds for constructing three miles of water main.

NEW COMPANIES.—Barnstable Water Co., Barnstable, Mass., was recently incorporated.——Commercial Water Co., White Plains, N. Y., $100,000; J. J. O'Connor, A. H. Grote, Edgar Scott McNight, New York, N. Y.——Campbell's Ledge Water Supply Co., Scranton, Pa.; $1,000,000; J. F. Eichholzer, Pittston, Pa.; Chas. Rittow, Carbondale, Pa. See item under Scranton in this column.——Vandalia Ditch & Development Co., Great Falls, Mont.; $30,000; H. H. Nelson, Sam Stephens.——Llano River Irrigation & Milling Co., Junction, Tex.; $50,000; A. C. Green, Palestine, Tex.; J. E. Adams, San Antonio, Tex.——Laredo Land & Irrigation Co., Laredo, Tex., has recently organized with $175,000 capital and has purchased 12,000 acres of land for improvement.——Seitz Ditch Co., Boise, Idaho; $2,500; Jacob Seitz, Chas S. Teller, Chas. McDonald.

SEWERAGE.

(For foreign sewerage work see under "Foreign Contracts and Export News.")

AUGUSTA, ME.—W. B. Getchell, Cy. Engr., writes us that a sanitary sewer will be constructed at cost of $4,500.

HOULTON, ME.—The stock of the Houlton Sewerage Co. will be purchased and extensions to its system made.

NORTHAMPTON, MASS.—The plans prepared by McClintock & Woodfall, Engrs., 15 Court Square, Boston, provide for the draining of the Greeneville and Cherry St. section.

NATICK, MASS.—At the town meeting $8,000 was appropriated for extending the sewerage system.

PALMER, MASS.—The sewer system on South Main St. will cost about $5,000.

SALEM, MASS.—W. H. Hill, Chn. Sewer Com., writes us that contracts will not be let for deep sea disposal of sewerage until surveys have been made, which will be in about eight weeks.

PROVIDENCE, R. I.—A sewer through Butler Hospital property to the Seekonk River will probably be constructed.

WATERTOWN, MASS.—The sum of $8,000 has been appropriated for constructing the system of drainage.

NEW BRITAIN, CONN.—H. B. Hooker & Son received the contract for constructing the trunk sewer and also for building a tunnel 1,048 ft. long.

BROOKLYN, N. Y.—Bids are asked by the Brooklyn Borough President until April 15 for constructing sewers in 19th St. Degraw St., 77th St., and various sewer basins. J. Edward Swanstrom, Pres.

BUFFALO, N. Y.—Miller & Franklin were the lowest bidders for constructing 545 ft. of 24-in. brick sewer, and 500 ft. of tile sewer on Dewey Ave., for $4,440. J. Mumm and Dark & Co. were the lowest bidders for constructing 2,765 ft. of 10 to 20-in. tile sewer on Kenmore Ave., at $4,659.

MEDINA, N. Y.—The cost of extending the sewer would be about $15,000.

NEW YORK, N. Y.—A sewer in Eighth Ave., at cost of $2,240, has been approved. Also along 11th Ave. at cost of $5,265, and one in Davis St.

CORINTH, N. Y.—System being discussed.

ASBURY PARK, N. J.—The grade of the sewer system will be changed. N. Rogers is Engr.

HOBOKEN, N. J.—A sewer system is being petitioned for.

SUMMIT, N. J.—The cost of a tunnel under Hobart Hill would be $212,000. A lateral sewer will soon be constructed at cost of $9,300.

TRENTON, N. J.—The bill for a trunk sewer emptying into New York Harbor has been passed by the senate.

ARDMORE, PA.—Bids are asked until May 4 for constructing about 41 miles of terra cotta pipe sewers, 8 to 24 ins. in diameter, with necessary Y-branches and manholes; also two collecting basins and pumping stations. At station A will be constructed a concrete collecting basin, with capacity of 500,000 gallons, a brick pump house for two vertical triplex pumps, having capacity of 1,000,000 gallons in 24 hours. Pumping main will be 6,700 ft. of 12-in. c.-i. pipe. At station B the collecting basin will have capacity of about 400,000 gallons, and pumps, 750,000 gallons in 24 hrs. Pumping main will be 3,000 ft. of 10-in. c.-i. pipe, as stated in our advertising columns. W. E. Barrett, Chn. Sewer Com., Ardmore, Pa.; C. E. Albright, Civil Engr., 908 Land Title Bldg., Philadelphia.

BALTIMORE, MD.—The ordinance appropriating $30,000 for extending the Eagle St. sewer has been approved by board public improvements.

NASHVILLE, TENN.—The council has appropriated $2,200 for constructing a sewer in alley between Church and State Sts. Also $43,000 for extending the Lick Branch sewer, and $11,000 for sewer in McLemore St.

BOWLING GREEN, O.—Bids have been rejected for sewering Clay and Buttonwood Aves. Bids will be re-advertised.

CINCINNATI, O.—A trunk sewer to cost $1,500,000 will soon be agitated. J. B. Washburn, Pres. Mill Creek Valley Sanitary Association.

CINCINNATI, O.—Bids are asked by City Clerk Holmes until April 22 for constructing sewers in Mayfield and Quebec Aves.

CLEVELAND, O.—Bids are asked until April 23 for constructing sewers in Edgewater, Fleet Sts., and Third Ave. C. P. Salen, Dir. Pub. Wks.

ZANESVILLE, O.—W. H. Adams received the South St. sewer contract.——The engineer will prepare plans for a sewer system for the Seventh Ward.

ZANESVILLE, O.—City Engineer is preparing plans for sewer in Ward 7.

CONNERSVILLE, IND.—J. S. Clouds, Cy. Clk., writes us that a number of other streets will be added to the ordinance now before the council and the question of bids will soon come up.

FRANKFORT, IND.—The city engineer will prepare plans and specifications for constructing the sanitary sewers on Main Ave. and Jackson St.

RUSHVILLE, IND.—A system is contemplated, to be owned by a private corporation.

PEORIA, ILL.—Work will soon start on the sewer system, which will cost about $90,000.

ROCKFORD, ILL.—Bids are asked by board local improvements until April 23 for constructing a sewer on Railroad, Fourth and 10th Aves. and 11th St., at cost of about $8,000, as stated in our advertising columns. A. Hutchins, Pres.; Edw. Main, Cy. Engr.

GREEN BAY, WIS.—If the sewer committee's report passes the council a number of sewers will be built.

WASHINGTON, IA.—The sewer system will be extended.

ST. PAUL, MINN.—Bids are asked until May 4 for constructing sewer and water system at Fort Missoula, Mont. G. E. Pond, C. Q. M.

ARMOURDALE, KAN.—R. L. McAlpin, Cy. Engr., writes us that plans are being prepared for the two-mile sewer system. One-half will be let this year for about $50,000.

FARGO, N. D.—Bids are asked until April 13 for constructing three 12-in. lateral sewers on Fifth, and Sixth Ave, North. and Third St. North. H. J. Gibson, Cy. Aud.

ST. LOUIS, MO.—Bids are asked by E. A. Herman, Sewer Comr., until April 28 for sewer construction in this city, as follows: Blackstone public sewer, 1,610 lin. ft., of 12½ × 15-in. brick sewer and 2,160 ft. 9-in.; average cut, 22 ft.; estimated cost, $120,000; Blackstone joint sewer, 3,210 ft., 9-in. brick, 20-ft. cut, $65,000; Blackstone district sewer, 7,674 lin. ft. brick, 2 × 3 ft. egg-shape to 7-in. diameter, and 51,700 lin. ft. pipe sewer, from 12 to 24-in. diameter, average cut, 16 ft., estimated cost, $132,000; Rock Spring district sewer, 3,070 ft., 5 to 6½ ft. brick, and 34,730 ft. pipe sewer, 12 to 24-in., 15 ft. cut, estimated cost, $116,000.

ST. LOUIS, MO.—The appropriation for the Blackstone sewer has been increased to $120,000.

HOUSTON, TEX.—F. L. Dormant, Cy. Engr., has completed the plans for the sanitary sewer system, which calls for about 40 miles of sewers.

SPOKANE, WASH.—Reports state that K. Gill, Cy. Engr., has completed plans for the extension of underground drainage, which will cost about $100,000.

BAKER CITY, ORE.—The council has adopted a resolution providng for sewers in Dewer Ave., and Resort, Campbell and other streets.

BAKERSFIELD, CAL.—It has been recommended that the sewer system be extended.

OAKLAND, CAL.—City Engineer Turner's estimate for sewers on Telegraph Ave. is $16,525.

SAN FRANCISCO, CAL.—It is stated that the board of public works will order a 21-in. iron-pipe sewer on Golden Gate Ave. and Turk St., and paving on various streets.——C. W. Fay, Clk., writes us that a brick sewer will be constructed in Sixth St., at cost of $49,000.

WOODSTOCK, ONT.—The sum of $20,000 will be spent on a trunk sewer and a septic tank.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

OGDEN, UTAH.—A. F. Parker, Cy. Engr., writes us that the construction of sewers in 38 blocks at cost of $55,000 has not yet been decided.

BONDS.—San Diego, Cal., will issue $140,000 for the construction of sewers.——Santa Barbara will issue $284,000, of which $14,000 will be for sewers.——An election will be held at Vinita, Ind. Ter., to decide upon an issue of $65,000 for sewers and water-works.——Ironton, O., will soon receive bids for sewer and garbage bonds.

GARBAGE DISPOSAL—STREET CLEANING

NEW YORK, N. Y.—Bids are asked by the Street Cleaning Department until April 17 for completing an abandoned contract for the collection of all garbage and kindred refuse beginning Sept. 1, 1903. John McG. Woodbury, Comr., 13 Park Row.

LOUISVILLE, KY.—The Louisville Sprinkling Co., which has the contract for sprinkling nearly all of the central part of the municipality, has been refused the use of the city hydrants by Louisville Water Co.

INDIANAPOLIS, IND.—It is reported that all bids recently received for street sprinkling were rejected and new bids ordered called.

DES MOINES, IA.—It is stated that contracts for the garbage plant owner by Engle, Thompson Co. have not yet been let. B. J. Engle, Newton, Ia., is interested.

MINNEAPOLIS, MINN.—The council committee on health have recommended that the garbage crematory be removed from 52d Ave. N. to Hall's Island, and that the contract for doing this be awarded to Williams Bros. for $2,000.

SEATTLE, WASH.—It is stated that the Health Board is considering the matter of establishing a garbage crematory.

STREETS AND ROADS.

PORTLAND, ME.—Bids are asked until April 20 for grading and constructing roads and sidewalks at Fort McKinley. Capt. A. W. Yates, Q. M.——The Maine & New Hampshire Granite Co. received the contract for granite paving blocks, for $8,931.

DERRY, N. H.—Edw. L. Jones, Selectman, writes us that bids for macadamizing, curbing, etc., of public highways are asked until April 20. Geo. H. Allen, Manchester, N. H., is Des. Engr.

GREAT BARRINGTON, MASS.—Elm St. will be paved with asphalt block at cost of $20,000. P. A. Russell, Memr. of Com.

LYNN, MASS.—The sum of $2,000,000 will probably be appropriated for highway purposes.

METHUEN, MASS.—J. Howe, Town Clk., writes us that the macadamizing of Lowell St. will not be done until late in the season, as sewer connections are to be made.

SOMERVILLE, MASS.—The sum of $50,000 has been recommended for highways, sidewalks, etc.

NATICK, MASS.—An appropriation of $5,000 has been made for macadamizing East and West Central Sts.

WORCESTER, MASS.—Bids are asked until April 13 for furnishing 12,000 sq. yds. of paving blocks and 35,000 ft. of curbstone. W. S. Prior, Street Comr.

ANSONIA, CONN.—The grading of Wakelee Ave., Fifth and Liberty Sts. is being discussed.

NEW HAVEN, CONN.—Cedar St. is to be paved with crushed stone at cost of $6,500.

PUTNAM, CONN.—Bids are asked until April 18 for constructing a section of gravel road. C. M. Green, Selectman.

BROOKLYN, N. Y.—Public Works Commissioner Redfield has announced that Kings Highway will be improved.

LONG ISLAND CITY, N. Y.—Bids are asked by the Queens Borough President, Borough Hall, 5th St. and Jackson Ave., until April 16 for paving 35,500 sq. yds. with asphalt and furnishing 2,870 cu. yds. of concrete.

NEW YORK, N. Y.—Bids are asked by the Borough President, City Hall, until April 14, for grading 144th St. and repaving 23,650 sq. yds. on Seventh Ave. with bitulithic pavement.

NEW YORK, N. Y.—Bids are asked by the Borough President, City Hall, until April 14 for paving 23,650 sq. yds. with bitulithic pavement and excavating 325 cu. yds. of rock.

NYACK, N. Y.—Asphalt block paving in Main St. will be done this year at cost of $2,700.

SENECA FALLS, N. Y.—The road between Waterloo and this place will be improved at cost of $11,850. W. H. Gere is Div. Engr., Syracuse.

CAMDEN, N. J.—F. W. George, Clk. Bd. Freeholders, writes us that no action has been taken in regard to macadamizing the Haddonfield and Gibbsboro road.

OIL CITY, PA.—Bids are asked until April 13 for paving Main St., estimated at $2,000, Grove Ave. improvement $3,000, and constructing Smedley St. sewer $400. S. W. Barnhart, Controller.

PHILADELPHIA, PA.—D. J. McNichol & Co. received the contract for constructing the Torresdale Boulevard, for which $250,000 has been appropriated.

WILLIAMSPORT, PA.—Bids are asked by the Highway Committee until April 16 for paving with brick on Market St. J. J. Galbraith, Cy. Clk. J. F. Fisher, Cy. Engr.

NORFOLK, VA.—Bids are asked until May 14 for paving about 2,200 sq. yds. with asphalt, as stated in our advertising columns. B. G. Turnstall, Chn. St. Comrs.

McCOMB, MISS.—J. D. Harrell, Cy. Clk., writes us that bids will soon be asked for brick sidewalks.

LOUISVILLE, KY.—The sum of $10,000 will probably be appropriated annually for assisting property owners in repairing streets.

PADUCAH, KY.—City Engineer Washington is making surveys for the paving, for which $15,000 has been appropriated. Bids will be asked when the survey is completed.

ADA, O.—Main St. will probably be paved with standard pavers for one mile.

BRYAN, O.—Lyon and High Sts. will be paved this summer. This, with the paving already under consideration, will cost $50,000. Bids will soon be asked for paving Main St.

COLUMBUS, O.—Julian Griggs, Ch. Engr., writes us that bids are asked until April 13 for paving four streets, requiring approximately 3,755 sq. ft., 4,210 ft. of curb, and before April 30, 11 streets, requiring 18,245 sq. yds., and 13,437 ft. of curb.

CINCINNATI, O.—The city engineer has been directed to prepare plans for remacadamizing Delhi Ave. Cost, $3,226. Grandin Road and Gilbert Ave. will also be improved at cost of $9,400 and $3,675 respectively.——E. E. Kellogg, Member Bd. Legislation, has offered a resolution directing the city engineer to submit estimate of the cost of raising Eastern Ave. Cost will be about $50,000.

CINCINNATI, O.—City Engineer Stanley is preparing plans for paving public landings along the wharf. Limestone or boulders will be used.

CINCINNATI, O.—Bids are asked until April 20 for paving Calhoun St. with granite blocks from Vine St. to Clifton Ave.; from Vine St. to Jefferson Ave. asphalt will be laid. Robt. Allison, Pres. Bd. Pub. Wks.

DELAWARE, O.—Plans will be prepared for paving Winter St. Brick will probably be used. Jas. Susey is interested.

FINDLAY, O.—Bids are asked until April 16 for paving Franklin Ave. with brick. F. C. Ray, Cy. Clk.

GLENVILLE, O.—Bids are asked until April 15 for paving St. Clair St. with asphalt or macadam. Address Village Engr.

LAKEWOOD, O.—Bids are asked until April 23 for paving Hall and West Lake Aves. with brick. J. French, Village Clk. W. H. Evers, Engr., Williamson Bldg., Cleveland.

MASSILLON, O.—Bids are asked until April 14 for paving South Erie St. with brick.

NAPOLEON, O.—Courtright & Hennessy received the Woodlawn Ave. paving contract for $7,989. Bolen block will be used.

STEUBENVILLE, O.—Bids will soon be asked for paving Sherman Ave. with brick. Also improvement of Wells St. W. M. Trainer, Cy. Clk.

TOLEDO, O.—Bids are asked until April 13 for constructing cylindrical brick sewers, 8 to 24 ins. inside diameter. C. H. Nauts, Cy. Clk.

TOLEDO, O.—O'Sullivan & Shehan received the Union St. contract for $3,600 with Wassall block; Corrigan Bros., Payne Ave., for $8,785 with Athens block.

BLUFFTON, IND.—Bids may be called for soon for gravel road construction. D. O. North, Surveyor.

FRANKFORT, IND.—The city engineer will prepare plans and specifications for paving Main St. South St. will also be improved.

TERRE HAUTE, IND.—Bids are asked until April 14 for paving in 16th St. S. C. Beach, Secy. Bd. Pub. Wks.

UNION, IND.—All principal streets will be paved with brick.

WASHINGTON, IND.—Bids are asked by the commissioners of Daviess county until April 20 for constructing gravel roads.

DETROIT, MICH.—Bids will soon be asked for paving 10 streets with sheet asphalt. Block asphalt is estimated at $151,000.

GROSSEPOINT, MICH.—Bids will soon be asked for macadam paving on Jefferson Ave. The road is to be 22 ft. wide, with Bedford stone curbing.

HOLLAND, MICH.—Bids are asked until April 22 for paving in 8th St., between River and Land Sts. Wm. O. Van Eyck, Cy. Clk.

KALAMAZOO, MICH.—South Park and South Sts. have been ordered paved.

MILWAUKEE, WIS.—The material for paving Commerce St. has not been chosen. The cost is estimated at $36,000.

ST. PAUL, MINN.—East Third St. will be paved at cost of about $13,000. Bids will soon be asked for paving East Sixth St.

CAMERON, MO.—M. T. Hayde, Kansas City, received the paving contract for $12,000. The sum of $120,000 will be spent this year on paving.

ST. JOSEPH, MO.—The Rock Island Ry. Co. will pave all alleys occupied by the company's tracks.——The paving of 17th St. with brick is under discussion.——Petitions for macadamizing the Asylum Road to the Platte River are in circulation. Cost is estimated at $6,500 per mile.

DALLAS, TEX.—The cost of macadamizing Ross Ave. is estimated at $17,000.

HOUSTON, TEX.—The paving of more streets is being discussed by prominent citzens. The sum of $25,000 has been raised by subscriptions. J. F. Dickson, Sr., Chn. Com.——Bids will soon be asked for resurfacing Liberty Ave., San Jacinto and Willow Sts. Cost is estimated at $25,000.

GALVESTON, TEX.—Tremont and Strand Sts. will probably be paved with brick at cost of $25,000. Bids will be asked soon.

PORT TOWNSEND, WASH.—Bids are asked until April 24 for constructing roads, board walks and sewer system at Fort Warden and Fort Casey, Wash. G. H. Penrose, Q. M. U. S. A.

BALLARD, WASH.—Reports state that Ballard Ave. will be paved with brick and cement sidewalks laid at cost of $40,000.

TACOMA, WASH.—It is stated that Yakima Ave. and North Fourth and Fifth Sts. will be paved.

WINLOCK, WASH.—The Cowlitz Pass road will cost about $26,000.

PORTLAND, ORE.—Washington St. will be repaved with asphalt and artificial stone sidewalks laid, at cost of $10,628.

SAN FRANCISCO, CAL.—C. W. Fay, Clk., writes us that Third St. will be repaved with basalt blocks at cost of $80,000.——The City Improvement Co. received the contract for paving Dupont St. with bituminous rock, for $8,771.——The United States Railroads will pay for paving Third St.

SALT LAKE CITY, UTAH.—A petition has been received for paving Second South St.

BOISE, IDAHO.—Brick will probably be the material used in paving 8th St.

WOODSTOCK, ONT.—F. J. Ure, Cy. Engr., writes us under date of April 4 that bids were being called for supplying 11,000 sq. yds. brick paving and for laying same on a macadam foundation.

BONDS.—Santa Barbara, Cal., will issue $284,000; Boulevard improvements will be $50,000 and sewer work $14,000.

MANUFACTURING PLANTS.

(For foreign manufacturing plants see under "Foreign Contracts and Export News.")

ATTICA, N. Y.—The Westinghouse Co. will establish a stoker plant and manufacture machines and engines. About 200 men will be employed.

NEW YORK, N. Y.—Bids are asked by A. Zimmerman, care of The National Biscuit Co., Chicago, Ill., until April 9, for new brick and steel factory, 125 × 84 ft., at 15th St. and 10th Ave.

NEWARK, N. J.—The Western Oil & Mfg. Co.'s plant has been destroyed by fire, with loss of $200,000.

PHILADELPHIA, PA.—Bids are asked until April 10 for a 4-story brick, slow-burning addition to P. Rumpf & Bros.' factory at Huntington St. J. F. Stuckert & Son, Archs., 1421 Chestnut St.——A. Chambley, 707 Walnut St., received the contract for a 2-story brick and steel foundry for the Phosphor Bronze Smelting Co., for $20,000.——Stuart Bros., 9th and Columbia Ave., are taking bids for a 2-story brick and slow-burning addition, 280 × 125 ft., to factory, at cost of $20,000.

SHARON, PA.—J. Stevenson will build a gas engine plant. Wm. Flynn, Pittsburg, is said to be interested.

BALTIMORE, MD.—E. J. Codd & Co., 700 South Carolina St., are taking bids for their new works. Brick and steel, two stories and 100 × 75 ft.——Stevenson & Co., 229 West Holliday St., are taking bids on a 3-story brick and steel machine shop, 60 × 100 ft.

COLEMAN'S FALLS, VA.—Gleaves & Co. received the contract for constructing a dam and power-house for the Bedford Pulp & Paper Co.

NEWPORT NEWS, VA.—J. A. Davis received the contract for erecting the Eagle Shoe Co.'s 4-story brick slow-burning factory, 50 × 150 ft.

WHEELING, W. VA.—The National Rolled Steel Car Co. will probably build a plant at this place at cost of about $1,000,000.

GREENSBORO, N. C.—The White Oak cotton mill will be equipped with 600,000 spindles and 2,000 looms, for manufacturing blue indigo denims.

ALLENDALE, S. C.—The Seaboard Cotton Oil Co. will erect a $50,000 cotton oil mill.

CHARLESTON, S. C.—The following bids have been received for building No. 9 at the Navy Yard: Conners Bros., Lowell, Mass., $323,000; Penn Bridge Co., Beaver Falls, Pa., $318,700; Snare & Triest Co., New York, N. Y., $319,800; L. P. Hazen & Co., Cincinnati, O., $298,720, and Clark Construction Co., Chicago, Ill., $297,751.

ATHENS, GA.—The Oconee Oil & Fertilizer Co. will enlarge plant at cost of $40,000.

DUBLIN, GA.—F. F. Scarborough, Mgr. Dublin Ice & Coal Co., will soon let the contract for erecting the company's buildings.

GAINESVILLE, GA.—W. A. Mathewson, Toccoa, will probably erect a cottonseed oil mill.

MEMPHIS, TENN.—The Erie Button Co. will build a factory 112 × 60 ft., and employ about 200 skilled laborers. The factory will be located on Trigg Ave.

UNION CITY, TENN.—A corn planter and drill factory may be built.

COVINGTON, KY.—Kenton Iron & Steel Co. will erect a plant. J. W. Arnold is interested.

ASHLAND, O.—F. B. Hursh, Arch., Mansfield, writes us that bids will be received about April 10 for building the Reliable Match Co.'s brick factory, 65 × 175 ft., with 30 × 30-ft. boiler-room attached. Cost estimated at $10,000.

BELLAIRE, O.—The Mason Co., manufacturers of the Mason Heater, will enlarge plant by a 3-story building.

CHESTER, O.—The Folansbee Tin Plate Co. will probably erect a new mill. Equipment will be ordered later.

CINCINNATI, O.—The Cincinnati Milling Machine Co. will build a 2-story addition, 171 × 41 ft. Also a tier of vaults three stories high, adjoining the office of the factory. S. Hanniford, Arch., Hulbert Bldg.

DAYTON, O.—The Union Storage Co. will erect a 2-story concrete and steel storage warehouse, 130 × 134 ft., on Bainbridge St. H. Loy is interested.

ELMWOOD, O.—Marienthal & Sons, 529 Poplar St., Cincinnati, will enlarge plant. F. W. Soper is Mgr.

FINDLAY, O.—The Hancock Brick & Tile Co.'s plant will at once be placed in operation. New equipment will be installed. J. S. Essler, Tarranton, Pa., is Pres.

FOSTORIA, O.—The Harter Milling Co. will make improvements to plant. A. Mennel is Pres.

LANCASTER, O.—The Lancaster Boiler Co. will erect a plant. H. H. Graft is interested.

NILES, O.—The Niles Car Mfg. Co. will soon erect a 60 × 120 ft. combination blacksmith and machine shop.

ORETON, O.—A cement plant may be erected. M. S. Conners, Logan, is interested.

PORTSMOUTH, O.—The Portsmouth Foundry & Machine Works will erect additional foundry. J. L. Watkins, Jr., is interested.

ANDERSON, IND.—The Indiana Box Factory has been destroyed by fire at loss of $40,000. J. McIlwaith will rebuild at once.

INDIANAPOLIS, IND.—Hetherington & Berner will build a $75,000 iron works and foundry factory on South St.

INDIANAPOLIS, IND.—C. D. Jenny, Pres. Jenny Electric Mfg. Co., has stated that the plant will be enlarged.

INDIANAPOLIS, IND.—The structural iron works of Heatheringot & Burner Co., East South St., have been burned with loss of $60,000.

MUNCIE, IND.—The Muncie Wheel Works contemplate erecting addition.

DETROIT, MICH.—The Michigan Can Co. will double capacity of plant. H. Sloman is Pres.

JENISON, MICH.—The Jenison Iron & Engine Co. has been destroyed by fire, at loss of $50,000.

MANCHESTER, MICH.—The Toledo Portland Cement Co. will erect a plant with capacity of 1,000 bbls. per day. Dr. Wm. Watts is Pres.

MUNISING, MICH.—A $1,000,000 pulp and paper mill is to be erected.

SAULT STE. MARIE, MICH.—The American Soo Pulp & Paper Co. will erect plant with a capacity of 150 tons of paper per day. The largest of the buildings will be the power-house, 92 × 398 ft. W. K. Kenny, Detroit, is interested.

DANVILLE, ILL.—W. E. Walker, Engr. Dept., has completed the plans for the Chicago & Eastern Illinois Ry. Co.'s car shops. The plant will comprise a machine shop, 316 × 121 ft., blacksmith shop, 100 × 136 ft., boiler shop, 199 × 204 ft. and power-house, 100 × 80 ft., and cost $163,000.

GENOA, ILL.—Thos. Sayer writes us that the Eureka Electric Co.'s plant will be 32 × 180 ft., with two wings, each 32 × 67 ft. J. Hadsall received the contract at $11,500.

PEORIA, ILL.—The American Spirits Mfg. Co. will enlarge the Madigan & Walsh plant and additional machinery will be installed. Bids will soon be asked. J. T. Murphy is Mgr.

PINE BLUFF, ARK.—The H. A. Rose Lumber Co., Paducah, Ky., will erect a band and planing mill about October.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

ST. LOUIS, MO.—The Manewal-Lange Biscuit Co. will erect a 6-story factory on Clark St. Pressed brick with stone trimmings will be used. Automatic fire sprinklers and electric elevators will be installed.

MINNEAPOLIS, MINN.—A $50,000 factory for creosoting wood will be established.

ORANGE, TEX.—The Progressive League is considering propositions for two more paper mills.

RUSK, TEXAS.—The legislature has appropriated $155,000 for the purpose of reopening and enlarging the iron furnaces.

SAN MARCOS, TEX.—A cotton mill may be erected. Capt. Wm. Green is interested.

OLYMPIA, WASH.—W. H. Cramer will erect a knitting factory at cost of $20,000.

MACHIAS, WASH.—The Three Lakes Mill Co. will erect a band sawmill with 50,000 ft. daily capacity. Chas. La Force, Trustee.

SAMOA, CAL.—The Hammond Lumber Co. will erect a sash and door factory.

SAN FRANCISCO, CAL.—H. & L. Block, 220 Bush St., will erect a 4-story factory at 15th and Valencia Sts., for manufacturing gloves.

SAN FRANCISCO, CAL.—The Union Brewing & Malting Co. will build a $125,000 plant at 18th and Florida Sts.—The Washington Brewery will build a $75,000 plant at Lombard and Taylor Sts. Marteno & Coffey, Archs., 819 Market St.

STOCKTON, CAL.—The Pacific Sanitary Ware Co. will soon erect a $150,000 plant on the site of the old pottery factory.

PRESCOTT, ARIZ.—J. P. Bosch and E. E. Ellsworth will erect a foundry and boiler shop.

SALT LAKE CITY, UTAH.—Mayor Hansen is reported to have made preliminary arrangements for erecting a condensed milk factory with capacity of 100,000 lbs. a day.

POCATELLO, IDAHO.—Reports state that the Oregon Short Line proposes to erect a foundry and car shops at cost of about $600,000.

CARBERRY, MAN.—The existing machine works will be enlarged. Address R. F. Lyons, M. P. P.

SEVEN ISLANDS, QUE.—Bids are asked by G. F. Hardy, Arch., 309 Broadway, N. Y., for constructing a plant, for manufacturing paper pulp, for the Shore Power Railway & Navigation Co. About 30,000 cu. yds. of concrete will be used.

MISCELLANEOUS CONTRACTS.

(For foreign miscellaneous contracts see under "Foreign Contracts and Export News.")

WHARF.—Malden, Mass.—The Malden Electric Co. is to build a wharf for receiving coal.

FISH HATCHERY.—Sisson, Cal.—An appropriation of $10,000 has been made for the local fish hatchery.

WHARF.—Fort Dade Fla.—Bids are asked until April 21 for constructing a wharf. Robt. S. Welsh, Q. M.

MILL STAMPS.—Minersville, Cal.—Reports state that J. H. Porter, Supt. Fairview Mine, will add ten stamps to the mill.

FIRE BOAT.—Portland, Ore.—The committee on a fire boat have decided to call for bids for designs for a suitable fire boat.

WIRELESS TELEGRAPH STATION.—Norfolk, Va.—The government is to erect a wireless telegraph station at the navy yard.

BREAKWATER.—Goderich, Ont.—The government has been asked to build a $100,000 breakwater at the local harbor entrance.

STAMP MILL.—Grass Valley, Cal.—The contract for a 40-stamp mill for the Tremont Mine in Amador county has been let to W. S. May.

WHARF.—Watsonville, Cal.—The contract for a wharf for the Watsonvile Transportation Co. has been let to Healy, Tibbits & Co. for $9,200.

SMELTER.—Houghton, Mich.—It is stated that a new smelter is to be built this season on the site of the old Atlantic Mill, on Portage Lake.

PAVILION.—Cleveland, O.—A pavilion is to be built at Silver Lake at a cost of $12,000. It will require 250,000 ft. of lumber for its construction.

FIRE APPARATUS.—Eldridge, Cal.—An appropriation of $5,000 has been made for fire apparatus for the Home for Feeble Minded at this place.

STAMP MILL.—Nevada City, Cal.—A report states that eight stamp mills belonging to the Murchie Mining Co. has been totally destroyed by fire.

PUBLIC PIER.—Newburgh, N. Y.—D. J. Coutant, Cy. Clk., writes us that no definite action has been taken toward the construction of a public pier.

CONCENTRATORS.—Wallace, Idaho.—The Saltese Co. Richard Daxon, Pres., has decided to install a 100-ton concentrator on its property this summer.

JETTY.—Galveston, Tex.—The contract for rebuilding the Galveston jetties has been let to J. M. O'Rourke & Co., Galveston, Tex., at a total bid of $589,950.

TUNNEL.—Boulder, Colo.—E. K. Stafford, Cy. Clk., writes us that the contract for cutting tunnel and open cut in Spring Gulch was let to Silas Yates for $873.

DITCH.—Clarion, Ia.—The supervisors will consider a petition for a ten-mile ditch at their April meeting. Geo. Davis, Wall Lake, P. O., Webster City, Ia., is interested.

FLAT-RAIL TRAMWAY.—Vancouver, B. C.—Plans for a flat-rail tramway from North Vancouver to the top of Grouse Mountain are being considered by North Vancouver citizens.

MINING MILL.—Virginia, Va.—It is reported that the Seaboard Copper Co., Merchants Bldg., 77 Summer St., Boston, Mass., will install a 50-ton mill at their copper mines.

DITCH.—Missouri Valley, Ia.—J. K. McGavren, Harrison County Drainage Commissioner, has been engaged on the route of a proposed ditch through Harrison and Pottawattomie counties.

DIMENSION TIMBER.—Ottawa, Ont.—Bids are asked until April 30 for about 155,000 ft. British Columbia fir dimension timber for the Rideau Canal. L. K. Jones, Secy. Dept. Rys. & Canals.

SMOKE STACK.—Kansas City, Mo.—Bids are asked by the board of public works until April 15 for erecting 175 ft. high stack at Turkey Creek pumping station, as is stated in our advertising columns.

PIER WORK.—Duluth, Minn.—It is stated that the south pier of the Superior Harbor entrance will be built by the government, all bids for the work having been rejected. The work will be done under the supervision of Capt. D. D. Gaillard, U. S. Engrs., and the appropriation available is $250,000.

PIER REPAIRING.—Grand Rapids, Mich.—Bids are asked until May 6 for repairing piers at St. Joseph and Black Lake, Mich., as is stated in our advertising columns. Maj. J. G. Warren, U. S. Engr.

FILLING.—Cambridge, Mass.—J. W. Pierce, Gen. Supt. Parks, writes us that bids are asked by the Cambridge Park Commission until April 17 for 50,000 cu. yds. of filling on section C of the River Parkway.

PARK.—New York, N. Y.—A bill before the legislature provides that the board of estimate and apportionment acquire the lands between 49th and 50th Sts. and 11th Ave. and the North River for park purposes.

SEA WALL AND RIVER IMPROVEMENT.—Sacramento, Cal.—Bills have been passed authorizng San Francisco to issue $2,000,000 of bonds for a sea wall, and appropriating $200,000 for river improvements.

NAVY YARD CHANGES.—Brooklyn, N. Y.—A board of naval officers has recommended that $1,166,000 be spent in givng the East River water front additional facilities for berthing warships at the Brooklyn navy yard.

SMELTER.—Grand Forks, B. C.—Reports that that the British Columbia Coal Co. will construct an additional smelter on the North Fork of the Kettle River and that the Cranby smelter will have its capacity increased.

LOG DAM.—Hartford, Vt.—Bids are asked until May 1 for constructing a log dam 240 ft. long and 13 ft. high across the Ottoquichee River at North Hartland, Vt., as stated in our advertising columns. R. E. Stevens, Treas.

DREDGING, ETC.—Duluth, Minn.—The contract for government work at Port Wing, consisting of dredging and constructing the east pier, has been let to Hugo & Tims, Duluth, for $22,200, the amount available for the work.

STAMP MILL.—Rollinsville, Cal.—We are informed that the Blue Grass Mining Co. expects to commence work about June 1 on a 10-stamp mill, the estimated cost of which is $10,000. R. L. Alexander is Supt. and official in charge.

FIRE ALARM SYSTEM.—Burlington, Vt.—The American District Telegraph Co. will install a night watch, patrol and fire alarm system in this city. W. H. Marten, Mgr. Local Western Telegraph Office, will have supervision.

STAMP MILLS.—Baker City, Ore.—It is stated that Supt. Thorpe of the Blue Bird Mine, has formulated plans for a 10-stamp mill. It is also stated that Manager Daines of the Belcher Mines is having plans made for a 40-stamp mill.

JETTY.—San Diego, Cal.—The contract for the San Diego jetty improvements involving about $200,000, has been let to A. E. Babcock. This contract was originally let to Waldo S. Waltham, who died before the details had been completed.

REDUCTION MILL.—Phoenix, Ariz.—Plans for the erection of a plant capable of reducing 50 tons of ore daily have been sent to the offices of the Relief Gold Mine Co., 20 Broadway, New York, N. Y. The estimated cost of the work is $20,000.

BOILERS.—Washington, D. C.—Bids are asked by the supervising architect until April 16 for high-pressure steam boilers, economizer and induced-draft apparatus for National Bureau of Standards. James Knox Taylor, Supervising Arch.

MINE DEVELOPMENT.—Birmingham, Ala.—The Sayre Mining & Manufacturing Co., recently incorporated with capital of $1,000,000, proposes to develop mines and build iron furnaces in this district. James Weisel, Birmingham, is an incorporator.

COALING STATION.—New Orleans, La.—It is stated that L. S. B. Hull, head of Hull, Blythe & Co., engaged in the business of steamship coaling, is in New Orleans for the purpose of establishing there one of the company's stations.

WAPAKONETA, O.—Contracts will be let at public outcry April 11 for constructing the Dues and Thieman ditches, located in Minster. The total estimated cost of Dues ditch is about $1,250 and of the Thieman ditch is about $2,900. Samuel Craig, Engr.

WHARVES.—Wilmington, Del.—Permission has been granted to the American Car & Foundry Co. to build an extension to its wharf line. Permission has also been granted to the Wilson estate and the Water Department to build wharves near the Market St. bridge.

CYANIDE PLANT, ETC.—Sonora, Cal.—It is stated that a cyanide plant is to be erected at the Rawhide Mine, and that the Horse Shoe Bend Gold Mining Co. will construct a dam, power plant and stamp mill on their property. Edward Goss is Engr. of the latter company.

DITCHES.—Crookston, Minn.—N. A. Hoffard, county auditor, writes us that all of the bids received March 25 for constructing judicial ditch No. 1 and drainage ditch No. 35 were rejected, and new bids asked until May 2. About 654,000 cu. yds. excavation will be required.

CONCRETE WALLS, ETC.—Petersburg, Ky.—It is stated that Gordon & Howard, of this place, have secured a contract from Cincinnati parties for laying 500,000 sq. ft. concrete walls, steps and fountains at an island resort at Langhery. The contract is said to involve $55,000.

PARK, PUBLIC BATH.—New York, N. Y.—Mayor Low has approved of the measures providing for the laying out of a new park, bounded by Ave. I, Ave. J, East 38th and 39th Sts., in Brooklyn, and authorizing $90,000 for the construction of an interior public bath in that same city.

FERRY SLIPS, ETC.—New York, N. Y.—It is stated that the proposed water front improvements of the Erie R. R. Co. include the abolishment of the present Jersey City terminal at Pavonia St., and the construction of a new terminal at 12th St. Five new ferry slips will be built at that place.

COAL MINING.—Hartshorne, Ind. Ter.—The Rock Island Coal Co. is stated to have secured control of various coal mines in this locality. The company contemplates equipping the mines with new and modern machinery, besides making other improvements. Carl Scholz, Little Rock, Ark., is Pres.

SMELTER.—Los Angeles, Cal.—The California Development & Exchange Co., recently incorporated with $1,000,000 capital, proposes to build a smelter at San Pedro, capable of handling 1,000 tons of ore a day. The company also proposes to erect an exchange building in Los Angeles. A. E. Clark is Pres.

ICE BREAKER, ETC.—Tompkinsville, N. Y.—The following bids were received April 2 for the erection of an ice breaker and repairing pier at Coxsackie light station, Hudson River, by the Engineer Third Light-House District: Chas. E. Pearsall & Son, Yonkers, N. Y., $6,975; Julian C. Smith, New York, N. Y., $3,225; Richard Parrott, Newburgh, N. Y., $4,940; Theodore Every, Athens, N. Y., $5,000; Frank Pidgeon, Saugerties, N. Y., $4,716.

MARINE GARDENS.—San Pedro, Cal.—Reports state that the Pacific Electric Railway Co. contemplates the construction of a 600 × 350-ft. marine garden in connection with the mole and wharf to be built in the outer harbor. The cost of the work is estimated at $250,000. Epes Randolph is Mgr. Electric Railway.

RIVER IMPROVEMENT.—Bangor, Me.—The West Branch Driving & Reservoir Co. will, it is said, spend $200,000 in the removal of obstructions, the repair and building of dams and the construction of reservoirs for the storage of water for manufacturing and driving purposes in the West Branch of the Pennobscott River. Garrett Schenck, Boston, Mass., is Pres.

FIRE-ALARM SYSTEM.—New York, N. Y.—Bids are asked until April 14 for building, extending and repairing the fire-alarm system in the Second, Third, Fourth and Fifth Wards of Queens Borough. Bids also asked for erecting and completing bell towers and furnishing striking apparatus for the fire-alarm telegraph system. Thomas Sturgis, Comr., 157 East 67th St.

MINING WORK.—Index, Wash.—R. H. Hingston, Mgr., writes us, under date of March 20, that the New York-Seattle Copper Mining Co. will itself drive the proposed new development tunnel. Mr. Hingston also writes that plans for an 80-ton concentrator are being made and as soon as completed bids will be called. This item was published in our last week's issue, but through a mistake no post office address was given.

DOCK WORK AND COAL-HANDLING MACHINERY, ETC.—St. Paul, Minn.—The Northwestern Fuel Co., St. Paul, Duluth and Milwaukee, it is understood, is about to build a dock, with timber cribbing, pile and masonry construction, and erect thereon buildings, power plants, dock machinery, coal handling conveyors, etc. G. H. Hutchinson, Ch. Engr.; E. N. Saunders, Jr., Purchasing Agent, St. Paul, Minn.

CANAL.—Chicago, Ill.—A contract has been signed between the Indiana Harbor syndicate and the trunk lines running through Hammond, Ind., from Chicago, by which a canal will be built at once from Indiana Harbor, 3½ miles south to the Calumet River. The canal is to be 300 ft. wide at the mouth, 250 ft. wide elsewhere and 21 ft. deep and will cost $700,000. The canal syndicate is made up of C. W. Hotchkiss, F. R. Babcock and others of Chicago.

WATER FRONT IMPROVEMENT.—St. Louis, Mo.—The council is to be asked to grant a franchise to the St. Louis Dock, Railway & Warehouse Co. for making various improvements to the water front. These involve the expenditure of $10,000,000 and contemplates the construction of a system of docks, warehouses, supply depots and cold-storage plants, to be connected by a system of railways, to extend along the river front from Washington Ave. on the north to Plum St. on the south, a distance of 13 blocks.

U. S. POSSESSIONS AND CUBA.

CANNERY.—Alaska.—Reports from Whatcom, Wash., state that R. Onffroy has organized the Peninsula Packing Co., to build on the Kuskokwin River, in Alaska, a 12-line cannery. An expenditure of $1,000,000 is contemplated.

RAILWAY.—Alaska.—The plans for the projected new railway extending 413 miles from the coast toward central Alaska have been completed, according to reports, and made public in Seattle, Wash., by George W. Dickinson, Pres. Surveys are said to have already been made. Leaving Seward, the route extends up the Salmon River Valley through dense forests, along the east shore of Kenai Lake, up Track Creek 30 miles and down Placer Creek to Turnagain Arm; thence around the Knick Mountains, due north to the head of Kick Arm. From that place a branch line into the Copper River country is being planned. The main line continues up the Sustina Valley through timber land and passes the Talkeetna Mountains. It is expected that the road will open up this mining country. From Sustina Valley the road is to run up the Sustina River to Indian Creek and thence to the pass through the Alaskan range. Easy approaches will make the ascent a simple task. The road then follows the Cantwell River to the valley of the Tanna. A terminal will be established on Resurrection Bay.

FOREIGN CONTRACTS—EXPORT NEWS.

RAILWAY.—Spain.—A concession has been granted to the San Martin-Lieres-Gijon-Musel Ry. Co. for constructing and operating for 99 years a narrow-gage line of railway from Tremañes to Veriña.

GAS LIGHTING.—Paris, France.—The municipal council committee on gas has adopted the American proposition for purchasing the Paris gas franchise. The promoters are New York capitalists, and propose rebuilding the entire present works.

RAILWAY.—Ireland—Bids are wanted by the Great Northern Ry. Co. until April 27 for constructing an extension nine miles long from Ballyconey Station to Annsborough, County Down, Ireland. T. Morrison, Secy., Amiens St. Terminus, Dublin.

DYKES.—Holland.—George J. Maas, Negaunee, Mich., who has been in Europe for the past nine months, has recently returned to this country, and is reported as stating that he will be awarded a contract for dike building in Holland, amounting to about $1,000,000. Mr. Maas has a patent steel spile which he will use in the work if awarded the contract.

TRAMWAY.—Spain.—Don Laureano Salgado Rodriguez, of Caldes de Reyes (Pontevedra), has been authorized to carry out surveys for tramways running as follows: From Vigo to Porriño by Redondela; from Villagarcia de Arosa to San Lazaro and the mines of El Sar by Santiago; from Pontevedra to El Grove by Sanjenjo; from Caldas de Reyes to Cambados by Vilanoviña and Nogueira.

HARBOR IMPROVEMENTS.—London, Eng.—A bill has been introduced in the House of Commons establishing port and dock authority for London. The bill follows the recommendations of the Royal Commission in regard to the acquisition of docks and proposes the expenditure of $12,500,000 for depening the River Thames. The board of control, to be appointed, will be empowered to purchase docks and warehouses and the London county council will guarantee the interest on the money borrowed for this purpose.

DOCK.—Bombay, India.—It is stated that the Bombay Port Trust plans a new dock with a water area of nearly 50 acres. The site is between the Ballard piers and the present docks. The dock will have a depth on the sill of 33¼ ft. at high water, and its entrance will be through gates convertible into a lock 600 ft. long. There will be a dry dock from 800 to 850 ft. in length. The scheme includes a deep water dock-head pier 1,250 ft. long. A branch line railway will run from Cooria through Mazagon to the dock-head pier. The Ballard pier will be trebled in length and connected with the dock-head pier, and the water space inside the angle of the two piers will be reclaimed and used as sites for bulk oil installations. The cost of the scheme, exclusive of the railway, is estimated at Rs. 30,000,000.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

HARBOR IMPROVEMENTS.—Jamaica.—Valentine G. Bell, Dir. Pub. Wks., Kingston, writes us under date of March 26, that no specifications for the work of removing the rock obstructions in Falmouth Harbor have been prepared, beyond those given in the proposal advertisement for bids, appearing in our last two issues and in the coming four. Mr. Bell also states that during the last year a report on the proposal to remove the rocks obstructing the harbor was made to the government of Jamaica by Capt. Caulfield, R. E., and a copy of this with plans and sections attached to it has been sent to Gillespie Bros. & Co., 4 Stone St., New York, agents for Jamaica, where it can be seen by parties interested. The bids for this work, calling for the removal of some 16,450 cu. yds. of rock, will be opened by the Director of Public Works at Kingston on May 30.

ELECTRIC RAILWAY.—Nicaragua.—Reports from Pittsburg, Pa., state that the Pittsburg & Boston Capital Nicaragua & Transcontinental R. R. Co. is now preparing for an active campaign in the building of an electric railway in this country, about 500 miles in length. The company is said to be backed by the U. S. Coffee Co., capitalized at $15,000,000. The railroad company was organized a few months ago, after some surveys for the line had been made, and has maps of the location now on file in its offices in the Smith Bldg., Pittsburg. The present means of transportation from the coffee plantations of the parties backing the road and the outside world is by wagon, and the distance is some 120 miles. The new railway will shorten the distance to the coast and with its main line and spurs will sweep almost the entire central and northern portions of Nicaragua. The power to operate the new road, a third-rail system used, will be derived from water, and the complete cost will be approximately $12,000,000. The Westinghouse Co. will furnish $3,000,000 worth of equipment. Among those interested are F. M. Latimer, of Pittsburg, principally, and C. A. Gaar and J. O. Dye, of Pittsburg, and New York parties.

MEXICO.—MISCELLANEOUS WORKS.

CITY OF MEXICO.—A correspondent sends the following:

The plans of J. Sitzenstatter and associates, who recently obtained a concession from the government for establishing a telephone system in this city, will be carried out by a London company capitalized at $500,000 gold, which has been organized for the purpose. It is proposed to not only establish a local system of telephones here, but to build and operate toll lines to various parts of the country and to establish local exchanges in all the principal cities of the Republic.——Silvie Contri, Arch., of this city, has drawn the plans for the new administrative building of the Federal department of communications and public works and the general telegraph office. Work will begin as soon as the plans are approved and the contract can be let. The building will occupy the site of the Santa Rosa Hospital, and will cover 5,000 sq. meters of ground. Italian renaissance will be the style of architecture.——Adame Boari, Arch., has prepared plans for the new National Theatre building, to occupy a block of ground.——Application has been made to the Federal Government by W. W. Graham and associates for a concession to utilize the waters of the Rio Grande in the district of Temascaltepec for the generation of electrical energy. A large power plant will be constructed if the concession is granted.——John Bannon, of New York city, has taken steps to establish a large factory here for the manufacture of paint oils. He says he is ready to expend $100,000 in the enterprise.——The San Ildefonso Electric Power Co., whose plant is situated at Tlalnepantla, about 10 miles from this city, is preparing to increase its capacity. The capital stock of the company has been increased from $1,000,000 to $2,000,000. Joaquin D. Casasus is Pres., and Ernesto Pugibet, Vice-Pres.

MEXICO CITY.—C. H. Cahan, representative of the Canadian Electrical Co., who has been in this city since last October looking after the company's interests, stated as follows, on March 25, regarding the company's plans: "The Mexican Light & Power Co., Ltd., completed its negotiations yesterday with the department of fomento, when a new concession was signed for the utilization of the waters of the Necaxa, Tenango and Catepuxtla Rivers, in the state of Puebla. This is the Canadian company which proposed to develop hydraulic power at Necaxa, and to generate electrical energy at that place for transmission for light, heating and power purposes in the City of Mexico. The municipal concession authorizing this company to place its electrical installations in the City of Mexico was signed on behalf of the ayuntamiento and the company on Saturday last. Hugh L. Cooper, Ch. Engr. of the company, has arrived in the city with his staff of engineers and will commence the work of construction at Necaxa during the present week, and will proceed with all possible speed. The company will expend about $5,000,000 gold in Mexico within the next 18 months. W. G. Ross, Treas. of the company, of Montreal, is at present in this city.

MEXICO CITY.—It is stated that the Campania Internacional Empercadora of Chihuahua, has decided to establish a packing plant in the immediate vicinity of this city, to cost about $1,000,000. It is to be located at Peravillo and will occupy five acres of land, but eventually it will be enlarged. The slaughtering plant will be capable of handling 350 head of beef, 300 hogs and 600 sheep daily. The company is also considering the advisability of building an extensive plant at Torreon. Enrique Creel, Gen. Luis Terrazas and other prominent Mexicans are primarily interested.

SAYULA, STATE OF JALISCO.—Mrs. Santez Gutierres de Bobadilla, of this place, has obtained a concession from the state for the establishment of an electric light plant here.

MONTEREY.—Pedro Trevino will construct a large bottling plant here. An ice factory with a daily capacity of 20 tons will be operated in connection with the plant. The permanent buildings for the factory will be constructed of stone, and their cost, with equipment, will reach $100,000.

ORIZABA.—The municipal government is considering constructing a complete sewer system.

PORFIRIO DIAZ.—Rafael Musquiz, of this place, has obtained a concession from the state government for establishing an ice plant and bath house here, and has organised a company to carry out the provisions of the concession. About $20,000 will be invested in the enterprise.

MERIDA.—Asphalt pavement will be laid in several streets.

MORELIA.—The state government of Michoacan, of which this city is the capital, has issued an official decree exempting from state taxation for a period of ten years all persons who repair their houses or build new ones. As a result of this decree a building boom has been inaugurated throughout the state.

OAXACA.—The state government is preparing to install an electric light plant in the state buildings here. The machinery of the old electric light plant of the penitentiary at the City of Mexico has been purchased for the purpose.

ZAMORA.—Local capitalists plan a new street railway system.——New theatre proposed.

DURANGO.—A state concession has been obtained by Cushing & Walkup, of this city, to build two dams in Los Alisos and Bacios Rivers, for storing water, which is to be conveyed through pipes to the mines in the Santiago Papasquiero district, this state.

STATE OF GUERERO.—It is reported that a syndicate of New York capitalists have secured an option on 1,500,000 acres of land in this state, of which there is said to be some 6,000 acres of iron ore. Edward Shearson, of the firm of Shearson, Hamill & Co., 71 Broadway, New York, is reported interested.

SAN CARLOS.—W. H. Nichols, Pres. San Carlos Copper Co. and Nichols Chemical Co., New York, accompanied by others of that company, will make an investigation of the route of the proposed railway to be built by the copper company from its property at this place to Linares, on the Mexican Central Ry., to determine the advisability of carrying the project through.

DURANGO.—It is reported from Durango that the contract between the state government and Mexican Central Ry. for constructing a branch from Jimenez to Durango will be approved by the legislature in a few days.——The government of Coahuila has granted a concession to the company, which is exploring the Ocampo and Bonanza mines, to construct a railway from the camp to the Jazminal station.

LOWER CALIFORNIA.—Reports state that E. H. Harriman, Pres. Southern Pacific R. R., New York, will receive a valuable land and cash concession from President Diaz of Mexico for the construction of a railway in Lower California, extending north and south and having a connection with the Southern Pacific in California. A company will soon be incorporated for the purpose. The portion in the state of California will be known as the Gulf & Imperial road, and is reported already under construction by the S. P. company for a distance of 40 miles. Surveys have been made for the remainder of the distance in California and preliminary surveys are made for a portion of the road in Lower California.

DURANGO.—Cushing & Walkup, who own several valuable mines in the state have asked government for concession to construct two dams in the municipality of Otaez, in Santiago Papasquiero district. One of the dams is to be built in the River Los Alisos, and the other to store waters from Bacios River. Water is to be carried to mines of the firm, which are to be worked on a large scale.——The American company, to be known as United Bufa Mining Co., has obtained an option for $500,000 gold on the Armendaiz and La America properties and the company will at once construct a road to the mines and spend a large amount of money in development work.

CONTRACT PRICES.

PAVING.—New York, N. Y.—The following are the lowest bids received by President Cantor, Borough of Manhattan, on March 17 for paving and improving various streets; in addition to these bidders were the Asphalt Construction Co., 137th St and Madison Ave., and the Sicilian Asphalt Paving Co., Times Building:

Bids Received at New York, N. Y., March 17, 1903, for Paving in a Number of Streets.

Bidder.	Work in	Laying pavement: Asphalt, 8,000 sq. yds.	Laying pavement: Stone, 8,050 sq. yds.	Laying pavement: Concrete, 230 cu. yds.	Curbing: New, 4,380 lin. ft.	Curbing: Old, 250 lin. ft.	Manhole covers: Sewer, 23 each.	Manhole covers: Water, 8 each.	Total.
Barber Asp. Paving Co....	East 69th St.....	$1.12	$0.40	$5.48	$0.89	$0.38	$20.00	$20.00	$18,054
	Quantities.....	5,560	5,580	160	2,490	600	16	4	
Barber Asp. Paving Co....	West 50th St.....	$1.22	$0.40	$5.48	$0.89	$0.38	$20.00	$20.00	$12,736
	Quantities.....	8,520	8,560	130	2,480	70	13	3	
Barber Asp. Paving Co....	East 86th St.....	$1.07	$0.40	$5.48	$0.89	$0.38	$20.00	$20.00	$15,806
	Quantities.....	6,900	6,950	190	3,580	140	19	8	
Uvalde Asp. Paving Co....	East 41st St.....	$1.10	$0.40	$6.00	$0.82	$0.35	$20.00	$20.00	$15,035
	Quantities.....	12,340	12,390	390	7,040	330	35	10	
Uvalde Asp. Paving Co....	West 38th St.....	$1.10	$0.40	$6.00	$0.82	$0.35	$20.00	$20.00	$27,658
	Quantities.....	15,480	12,820	370	6,100	500	37	17	
Continental Asp. Pvg Co...	East 23d St.....	$1.50	$0.35	$6.00	$0.85	$0.35	$21.00	$21.00	$36,421
	Quantities.....	11,650	11,750	310	6,700	270	25	10	
Barber Asp. Paving Co....	122d St.....	$1.06	$0.40	$5.48	$0.89	$0.38	$20.00	$20.00	$25,513
	Quantities.....	7,350	7,380	192	4,150	175	21	7	
Barber Asp. Paving Co....	East 50th St.....	$1.09	$0.40	$5.48	$0.89	$0.38	$20.00	$20.00	$16,336
	Quantities.....	4,420	4,440	130	2,520	40	12	3	
Uvalde Asp. Paving Co....	East 5th St.....	$1.14	$0.36	$6.00	$0.82	$0.35	$20.00	$20.00	$9,797
	Quantities.....	5,800	5,900	150	2,965	65	15	5	
Barber Asp. Paving Co....	East 88th St.....	$1.08	$0.42	$5.48	$0.89	$0.38	$20.00	$20.00	$12,630
	Quantities.....	9,100	9,370	225	4,500	1,500	7	8	
Barber Asp. Paving Co....	Lex. Ave. 119th-131st	$1.05	$0.42	$5.48	$0.89	$0.38	$20.00	$20.00	$19,598

DREDGING, PILES, CONCRETE, ETC.—Washington, D. C.—The following bids were received by Lieut.-Col. Chas. Allen, U. S. Engr., on March 27, 1903, for work in connection with the construction of the new highway bridge across the Potomac River; advertised in Engineering News; the bids for the bridge proper are given under "Bridges" in this issue; (1) Scherzer Roller Lift Bridge Co., Chicago; (2) Pennsylvania Steel Co., Philadelphia; (3) Arthur McMullen, New York; (4) Penn Bridge Co., Beaver Falls, Pa.:

	1.	2.	3.	4.
Dredging, a cu. yd.....	$0.75	$1.05	$1.00	$0.50
Foundation piles, placed, a ft.	.35	.22	.30	.50
Fender piles, placed, a lin. ft.	.35	.25	.30	.40
Yellow pine timber, a M ft...	50.00	40.00	40.00	65.00
Concrete:				
No. 1, placed, a cu. yd...	10.00	8.00	8.00	8.00
No. 2, placed, a cu. yd...	8.00	8.00	8.00	8.00
Squared granite backing, a yd.	20.00	32.00	25.00	28.00
Granite ashlar, a cu. yd.....	27.00	32.00	30.00	32.00
Facing, Pier 8, a cu. yd.....	30.00	*45.000	*45.000	.....

*Lump bids.

JETTY.—Wilmington, Del.—The following bids were received by Col. J. A. Smith, U. S. Engr., on April 2, 1903, for constructing a jetty at mouth of Mispillon River; advertised in Engineering News; (1) bid of Julian C. Smith, 100 William St., New York; (2) Benj. T. Collins, Milford, Del.; (3) Wilson M. Vinyard, Milford, Del.:

	1.	2.	3.
Brush, per cord, in place	$3.15	$3.00	$3.25
Stone per cu. yd. in place.....	3.15	3.00	3.50
Sawed timbers, per M. ft., B. M....	30.00	40.00	30.00
Piles, per lin. ft. in place.....	.20	.15	.17
Bolts and washers in place.....	.05	.04	.07
For boards and transfer rope, per day	.75	1.00	1.00
Total, for length of 100 ft., placed	$1,064	$985	$1,096

PAVING BLOCKS, ETC.—Fall River, Mass.—The Superintendent of Streets received the following bids for paving blocks and curbing on April 1: Paving blocks, Rockport Granite Co., 225,000 blocks, $72 per 1,000, delivered at wharf; Booth Bros., New York, 225,000 blocks, $75, at wharf; Neil Fletcher, 100,000 blocks, $60, f. o. b. cars, Fall River; Archie F. Benoit, Fall River, 25,000 blocks, $58 per 1,000, on street; Dudevoir & Savoie, Fall River, 25,000 at $62.50, 25,000 blocks at $65, 25,000 blocks at $66, all on street; William Beattie, Fall River, 60,000 blocks at $65, 40,000 blocks at $70, both on street.—Granite curbing, Dudevoir & Savoie, 3,000 ft., 68½ cts. per ft., on street; William Beattie, 10,000 ft., 75 cts., on street; Archie F. Benoit, 25,000 ft., at 67½ cts., on street; Hooper, Havey & Co., North Sullivan, Me., 5,000 ft. at 75 cts., 5,000 ft. at 76 cts, 15,000 ft. at 77 cts., all at wharf; Timothy Benoit, 10,000 ft. at 67½ cts., on street, $1.10 for return stones; M. D. Chatto, South Brooksville, Me., 5,000 ft. at 78 cts, at wharf.—Artificial curbing, including the laying, Simpson Bros. Corporation, Boston, 25,000 ft., 74 cts. for straight, 86 cts., curved; E. R. Tay & Co., Boston, 25,000 ft., 99 cts. straight, $1.14 curved; Warren Bros Co., Boston, 25,000 ft., $1.03, straight, $1.20, curved.

PAVING.—Davenport, Ia.—The board of public works opened bids for street paving on March 31, 1903, among which the following were submitted; Snouffer & Ford bid the same on all streets, as follows: Excavation, 40 cts. a cu. yd.; Telford macadam, $1.10 per sq. yd.; brick, $1.55; cement curb, 40 cts. a lin. ft.; stone curb, 65 cts.:

Items.	McCarthy Stone Co.	Davenport Const'n Co.	People's Const'n Co.
Rock Island St.:			
Excavation, a cu. yd. ..	$0.39	$0.30	$0.32
Brick, a sq. yd.	1.44	1.46	1.45
Curb, a lin. ft	.35	.35	.36
Perry St.:			
Excavation, a cu. yd...	.39	.34	.32
Brick, a sq. yd.....	1.44½	1.46	1.44
Curb, a lin. ft.....	51	.57	.36
Harrison St.:			
Excavation, a cu. yd...	.37	.32	.45
Brick, a sq. yd.....	1.45½	1.47	1.46
Curb, a lin. ft	.52	.57	.57
Farnam St.:			
Excavation, a cu. yd...	.39	.35	.30
Telford, a sq. yd.....	1.10	1.13	.....
Brick, a sq. yd.....	1.42½	1.50	1.42
Curb, a lin. ft.....	.56	.60	.60
Scott St: Excavation, a yd.	.35	.34	.35
Brick, a sq. yd.....	1.39	1.44	1.42
Curb, a lin. ft.....	.55	.60	.59
Fifth St: Excavation, a yd.	.38	.35	.40
Brick, a sq. yd.....	1.41	1.44	1.42
Curb, a lin. ft.....	.49	.57	.55
Sixth St.: Excavation, a yd.	.39	.32	.40
Brick, a sq. yd.....	1.42½	1.45	1.42
Curb, a lin. ft.....	.55	.60	.56
Third Ave.:			
Excavation, a cu. yd...	.35	.31	.35
Telford, a sq. yd.....	1.10	1.13	.98
Brick a sq. yd.....	1.44	1.50	1.45
Curb, a lin. ft.....	.56	.60	.60

SEWER.—Des Moines, Ia.—The board of public works received the following bids on March 23 for sewer work: (1) 15th St. sewer, 2,232 lin. ft.; (2) Park St.; (3) Bluff St. overflow; (4) Willow St. overflow; E. L. DuBois & Co., (1) $1.49; (2) $1.54; (3) $7.35; Jones & Roderick, (1) $2.28; (2) $2.21; O. P. Herrick, (1) $2.19; (2) $1.94; Shepard & Hanrahan, (1) $2.51; (2) $2.23; (3) $5.89; (4) $6.95; T. J. Casselberg, (1) $2.30; (2) $2.21; G. F. Lambert, (1) (3) $7.72; (4) $7.97; W. F. Cook, (3) lump sum, $2.288; (4) $5.92.

WATER PIPE.—Toledo, O.—T. R. Cook, Supt., informs us that the following bids were received April 3 for furnishing water pipe; contract awarded American Car & Foundry Co.; (1) 30 tons of 4-in. pipe; (2) 800 tons 6 and 8-in., and (3) 270 tons 20-in.:

	1.	2.	3.
Am. Car & Foundry Co., Detroit, Mich.	$30.00	$29.50	$29.30
The Dimmick Pipe Co., Birmingham, Ala	33.00	33.00	33.00
U. S. C.-I. Pipe & Fdry Co., Chicago.	31.40	30.40	29.40
Reading (Pa.) Foundry Co.	31.80	31.80	31.40
Jas. B. Clow & Sons, Chicago.....	32.90	31.90	31.90
The National Supply Co., Toledo, O..	31.90	30.90	29.90

SEWER CONSTRUCTION MATERIALS.—Worcester, Mass.—The following bids were received March 30 for sewer construction materials: (1) manhole covers; (2) catch-basin covers; (3) Rosendale cement; (4) sand; (5) sewer pipe.—Sessions Foundry Co., Bristol, Ct., (accepted) (1) $0.30, (2) $1.86 per 100 lbs.; Wheeler Foundry Co., Worcester, (1) $12.50, (2) old style, $2.25 per 100 lbs, new style, closed, $15.25 each, open, $17, half open, half closed, $16.12; William Allen & Sons, (1) $16, old style, closed, $10.40, old style, open, $12.75, new style, closed, $20.50, new style, open, $18.75; Barbour Stockwell Co., Cambridgeport, (1) $11.14, (2) old style, $2.25 per 100 lbs., new style, closed, $12.94, open, $14.11; B. F. Marsh & Co., Worcester, (3) $1.08 barrel, 93 cts. bag; F. E. Powers, Worcester, (3) $1.06 barrel, 94 cts. bag; Smith-Green Co., Worcester, (3) (accepted) $1.04 barrel, 89 cts. bag; New England Brick Co., (3) $1.11 barrel, 96 cts. bag; B. F. Marsh, (4) $1.35 per cu. yd.; E. S. Streeter, (4) (accepted) $1.25; Smith-Green Co., (5) 2-ft. pipe, 64½ cts., lengths of 2 ft. or more, 62½ cts.; Portland Stoneware Co., (5) 2-ft. pipe, 67 cts., lengths of 2 ft. or more, 65 cts.; Portland Stoneware Co., 2-ft. pipe, 64 cts., 2 ft. or more, 62 cts.; B. F. Marsh, 2-ft. pipe, 62 cts.

BRICK PAVING, ETC.—Erie, Pa.—The following bids were received by the council on March 23 for brick paving. All bids for paving 16th St. were rejected; J. McCormick & Son were the lowest bidders at $2.09 per sq. yd.; 12th St. paving: Mayer Bros., Park, Advance or Canton brick, $2 per sq. yd.; Mack No. 1 brick, $2.05;

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catch-basins, $48; 9-in. pipe, 75 cts.; 6-in. pipe, 60 cts.; total Park, Advance or Canton brick, $8,955; Mack, $9,295; J. McCormick & Son, Park or Mack brick, $2.10; catch-basins, $45; 9-in. pipe, 75 cts.; 6-in. pipe, 50 cts.; total $9,498; V. D. Eichenlaub, Mack or Park brick, $2.14; catch-basins, $50; 9-in. pipe, 75 cts.; 6-in. pipe, 50 cts.; total, $9,587.

BRICK PAVING.—Kansas City, Mo.—A. R. Mense was awarded the contract for paving three alleys with brick on March 25 at $1.95 and $1.89 per sq. yd.

BULKHEAD.—Boston, Mass.—The contract for building a spruce bulkhead on the flats at South Boston has been awarded by the board of harbor and land commissioners to Geo. H. Cavanagh at $8.50 per lin. ft.

REMOVING ROCK.—Philadelphia, Pa.—Lieut.-Col. C.W. Raymond, U. S. Engrs., 815 Witherspoon Bldg., received the following bids on April 2, 1903, for removing rock in the Delaware River, as advertised in Engineering News: (1) For removing and depositing rock or boulders, 9,500 cu. yds.; (2) for removing and depositing overlying and adjacent material, 163,000 cu. yds.:

	1.	2.	Total.
Submarine Cont'g Co., New York....	$19.85	$0.50	$270,075
R. G. Packard Co., New York.....	65.00	.65	723,450
P. S. Ross, Inc., Jersey City, N. J.....	30.00	.92	434,960

CONCRETE WEIRS.—Atlantic City, N. J.—The lowest bid received by Kenneth Allen, Engr. and Supt. Water Dept., on April 3, 1903, for constructing concrete weirs at Absecon Reservoir, as advertised in Engineering News, was submitted by C. J. Kelly, Atlantic City, at the following prices (contract awarded him): Removing old weir, $300; 820 cu. yds. excavation, at 50 cts. per cu. yd.; 200 cu. yds. first-class concrete, $8 per cu. yd.; 360 cu. yds. second-class concrete, $8.50; 300 lbs. iron, 8 cts. a lb.; setting two waste pipes, $25 each; cofferdam, $502; piling in place, 40 cts. a lin ft.; sheet piling, in place, $28 per 1,000 ft.; hemlock, in place, $28 per 1,000 ft.; total, $5,946. The other bidders were: F. W. Schweiers & Co., 136 Liberty St., New York; American Paving & Construction Co., 211 South 9th St., Philadelphia; Smedley Construction Co., 712 Stephen Girard Bldg., Philadelphia; E. T. Fonder, 15 N. Juniper St., Philadelphia.

DREDGING.—Petersburg, Ill.—The following bids were received April 3, 1903, by the commissioners of Salt Creek Drainage District on approximately 1,000,000 cu. yds. of inland dredge work: John McAndrews, Knox, Ind., 7 cts. per cu. yd.; Canal Construction Co., Chicago, 7.43 cts.; Pollard, Goff & Co., Champaign, Ill., 7.33 cts. (awarded contract); J. E. Rogers & Co., Tuscola, Ill., 8.83 cts.; R. N. Andrews Co., Hamilton, O., 8.85 cts.; R. A. Brown & Co., Washington, Ind., 8 cts.; G. A. McWilliams, Walnut, Ill., 8 cts.; A. V. Wills & Sons, Pittsfield, Ill., 7.60 cts.; C. H. Sternberg & Sons, Meduryville, Ind., 8.25 cts.; E. T. Williams, Duluth, Minn., 11 cts.

INDUSTRIAL NOTES.

HYDE BROS. & CO., of Pittsburg, Pa., have removed their offices from the Lewis Bldg to 503-6 German National Bank Bldg., Pittsburg.

THE NEWTON ENGINEERING CO., Hathaway Bldg., Milwaukee, Wis., has taken over the civil engineering business of the late A. M. Patilz.

THE BACON AIR LIFT CO., 100 Broadway, New York, announces that on or about May 1 it will remove its offices to the Wyllys Bldg., 92 William St.

THE APEX EQUIPMENT CO., 11 Broadway, New York, has received an order from the Dayton & Western Traction Co. for 15 standard gage hopper bottom ballast cars.

MACKENZIE, QUARRIES & FERGUSON, 114-118 Liberty St., New York, have been incorporated and will continue to represent the Harrisburg Foundry & Machine Works.

THE N. Y. CONTINENTAL JEWELL FILTRATION CO., New York, has been awarded the contract for the filters for the entire city of Ithaca, N. Y. The company was recently awarded the contract by Cornell University for installing filters, and also by the Producers Powder Co. of Ashburn, Mo.

JUSTICE COX, JR., & CO. Ltd., Bullitt Bldg, Philadelphia, report that they have sold to the Mexican Great Central Ry. Co., Chicago, Ill., sufficient new 75-lb. steel T rails and fastenings to lay about 400 miles of road. Deliveries are to be made during the balance of the year and the first three months of 1904.

THE ENGINEERING AGENCY, Monadnock Block, Chicago, received applications in one day last week for 67 high-grade technical men; one company asking for 25 blast furnace draftsmen at $125 to $150 a month and another company for 30 structural draftsmen at $125 a month. The Agency has vacancies on its books for over 200 competent men, including instructors in Shop Work for technical colleges, teacher for Manual Training School, assistant editor for technical journal, chemists, engineers of all kinds, shop superintendents, draftsmen, etc. Over 5,000 men have been placed by it during the past 10 years. The officers of the Agency are: Pres., F. A. Peckham, for 12 years with Engineering News; Treas., A. B. Gilbert, for 11 years with Engineering News; Secy., A. G. Frost.

THE BURT MFG. CO., Akron, O., has received orders or has just completed orders for the following: World's Fair, St. Louis, Mo., Cross oil filter made by the Burt Mfg. Co.; 25th order from the American Tinplate Co., making 30 oil filters; F. B. Goodrich Co., Akron, one large oil filter; Baldwin Locomotive Works, 16th order for exhaust heads; Pittsburg Steamship Co., large filter for its steamers; U. S. Steel Corporation, two large filters, making 114 now in use at its different mills. Among other orders recently received for the Cross filters are a 50-gallon one for an electric plant at Mexico City, 4 large ones to be used on steamers now being built by the Eastern Shipbuilding Co., 2 to be used in one of the pumping stations of the City of N. Y., 1 for the Plano works of the International Harvester Co., the 18th order from the Am. Sheet Steel Co., 8 for San Francisco, 1 to Portugal, and their agent at Mexico has just ordered 16.

THE LOMBARD WATER WHEEL GOVERNOR CO., Boston, report that they have recently closed orders as follows for its water wheel governors: Cascade Electric Co., Berlin, 1 type B governor; Redlands (Cal.) Elec. Light & Power Co., 1 type F governor; Brattleboro (Vt.) Gas Light Co., 1 type O governor; Ware Shoals Mfg Co., Laurens, S. C., 2 type B governors and 4 hydraulically-balanced relief valves; Nasonville (R. I.) Woolen Co., 1 type D governor; Athens (Ga.) Elec. Ry. Co., 1 type D governor; Ludlow (Mass.) Mfg. Associates, 1 type D governor; Sebasticook (N. Y.) Power Co., 3 type D governors; Niagara Falls (N. Y.) Pow. Co., 1 type G governor; Lynchburg (Va.) Water Pow. Co., 2 type B governors and 4 electric speed controllers; Pub. Wks. Co., Bangor, Me., 2 type B governors with electric speed controllers; Zanesville (O.) Electric Light & Power Co., 2 type B governors with electric speed controllers; Canadian Elec. Light Co., Levis, Que., 1 type B governor; Victor M. Braschi & Bro., Mexico City, 1 type F governor; Sacramento Electric, Gas & Rwy. Co., 1 type B governor and electric speed controller; Valley Counties Power Co. of California, 2 type D governors with electric speed controllers.

NEW COMPANIES.—Waco Brick & Manufacturing Co., 525 Main St., East Orange, N. J.; objects, manufacturing bricks, sewer pipes, etc.; $400,000; Robt. N. Clyde, Fred. L. Palmer, Chas. O. Geyer.

New England Steel Co., Augusta, Me.; metal castings; $1,000,000; Eugene Edwards, Malden, Mass.

Southern Mechanical Co., 15 Exchange Pl., Jersey City, N. J.; general manufacturing; $150,000; K. K. McLaren, Jos. M. Mitchell, Louis B. Dailey.

Pennsylvania Tool Steel & Forge Co., 419 Market St., Camden, N. J.; $150,000; Louis E. Welsh, Otto F. Goest, Robt. A. Welsh.

Cameron Tool Co., Cameron, W. Va., $2,000; machine tools; J. C. Unsher, Harry Buckley, C. M. Irwin.

East Chicago Bridge Co., East Chicago, Ind.; $50,000; to establish bridge plant; Chas. O Baughman, J. W. Creekmur, N. E. George.

California Fireproof Construction Co., Pasadena, Cal.; $75,000; to construct plants for manufacture of sewers and water pipe, building material and clay products; E. G. Durant, A. H. Green, J. M. Wiskart.

Benson Concrete Stone Co., Benson, Minn.; $50,000; Ira C. Gilman, Elden J. Cork, A. Andrews.

Waco Pressed Brick & Tile Co., Waco, Tex.; $5,000; W. J. Wigley, H. H. White, J. C. Cavender.

International Ballot Machine Co., 419 Market St., Camden, N. J.; $500,000; to manufacture ballot machines; J. C. Karnohan, C. E. Foster, C. H. Taylor.

Northern Construction Co., 419 Market St., Camden, N. J.; $100,000; general construction; Joseph D. Stone and L. A. Dymond.

Pendleton Shipbuilding & Navigation Co., Belfast, Me.; $1,000,000.

Universal Patents Mfg. Co., 26 Lawrence St., Newark, N. J.; $100,000; to manufacture lock hooks for coats, hats, etc.; Chas. J. Schilling, Ernest Hirschoff, Fred. Peters.

American Trimotor Co., 419 Market St., Camden, N.J.; $200,000; manufacturing trimotors; J. F. Hinckley, J. T. Miller, Wm. Tucker.

Phoenix Lighting Co., Portland, Me.; $1,000,000; to deal in inventions and improvements for lighting and heating; A. E. Knowlton, Pres.; Chas. C. Smith, Treas, Kittery, Me.

Cyclone Pump Co., Kittery, Me.; $200,000; to make and sell pumps, engines, boilers, etc.; Chas. C. Smith, Pres.; C. M. Prince, Treas.

Electric Cable Joint & Appliance Co., New York; $100,000; Wm. M. Murphy, F. H. Willmont, New York.

PUBLICATIONS RECEIVED.

NOTES ON METALLURGICAL ANALYSIS.—Arranged for Students in Metallurgical Chemistry. Selected Methods for the Analysis of Iron and Steel and of the Materials used in their Manufacture, including the Analysis of Gases, Fuels, Water for Boiler Supply, etc. Together with Explanatory Notes on the Manipulation and Chemistry of the Various Processes. By Nathaniel Wright Lord, E. M., Professor of Metallurgy and Mineralogy at the Ohio State University and Consulting Chemist of the Ohio Geological Survey. Second Edition, Rewritten and Greatly Enlarged. Columbus, O.: Metallurgical Laboratory, Ohio State University. Cloth; 6 × 9 ins.; pp. 228; illustrated. $2.50.

EXPURATION DES EAUX.—D'Alimentation de Chaudièreres et Désincrustants. By A. Taveau, Engineer of Arts and Manufactures. Paris: Gauthier-Villars. Heavy paper; 5 × 8 ins.; pp. 158; 19 illustrations. 3 francs; in the United States, 90 cts.

TRADE PUBLICATIONS.

(The standard sizes for pamphlets and trade catalogues recommended by all the principal engineering societies of the United States are: 3½ x 6 ins., 6 x 9 ins., and 9 x 12 ins.)

ELECTRICAL CONDUITS.—The Fiber Conduit Co., Orangeburg, N. Y. Paper, 3½ × 6 ins.; pp. 4; illustrated.

This pamphlet relates to fiber conduits for underground electrical work, and shows the couplings, elbows, tees and other appurtenances. With the pamphlet is a wire table and a price-list printed on celluloid.

ALL-STEEL FURNITURE AND FILING EQUIPMENT.—The General Fireproofing Co., Youngstown, O. Paper; 6 × 8 ins.; pp. 29; illustrated.

The use of steel has been extended by this company to cover book cases, letter files, card index cases, map cases, vault trucks and equipment, tables, flat and roll-top desks and other office and library furnishings.

FOLDING DOORS FOR FREIGHT SHEDS, ETC.—Variety Mfg. Co., Chicago. Paper; circulars; 9½ × 11 ins. and 10 × 12 ins.

These are lithograph sheets showing in detail the construction of the Cross corrugated folding door for freight sheds and warehouses, and the Cross door for elevators. There is also a reproduction of a photograph of the folding doors as fitted to the freight house of the L. S. & M. S. Ry. at Chicago.

Mail Delivery Notice.

The first pages of Engineering News go to press on Monday each week, and the last pages, including "Wants," "Proposals" and "For Sale" cards, about Wednesday noon. All papers for Boston, Philadelphia, and Greater New York should be received Thursday morning. All places East of the Mississippi should be reached by Friday afternoon.

If your paper is not received promptly, make a complaint in writing to your local post-office officials. This will cause an investigation, and the complaint will finally reach the office where the delay occurs.

SEWERS AND DISPOSAL WORKS.

Ardmore, Pa., April 4, 1903.

Sealed bids will be received up to 4 p. m., Monday, May 4, 1903, for constructing a System of Sewers for the Township of Lower Merion, Montgomery County, Pa. Bids must be addressed to, and applications for Plans and Specifications made to W. E. Barrett, Chairman Committee on Health and Drainage, Ardmore, Pa. Applicants for specifications must deposit $5, one-half of which will be returned upon the return of the specifications to Mr. Barrett.

Each bid must be accompanied by a certified check endorsed in favor of the "Commissioners of Lower Merion Township," and equal to at least 3% of the total amount of the bid. The checks of the unsuccessful bidders will be returned within five days from opening of bids. The check or checks of the successful bidder or bidders will be returned upon the filing and acceptance of the necessary bond with the Commissioners.

It is understood that point of time designated by the bidders for completion of the work will be considered an essence of the contract.

SEWERS.

The work will consist of laying approximately 41 miles of Terra Cotta Pipe Sewers, of the following diameters, 8, 10, 12, 15, 18, 20 and 24 ins., with all necessary Y branches, manholes, etc.

Bids will be entertained for the work in sections—of which there are seven—and for the entire work.

PUMPING STATIONS.

There will also be constructed two collecting basins and pumping stations for collecting sewage and pumping same to high-level main sewer. At Station "A" will be constructed a concrete collecting basin with an approximate capacity of 500,000 gallons, a brick pump house, for two vertical triplex pumps having a capacity of 1,000,000 gallons in 24 hrs., each pump is to be direct-connected to a gasoline engine. Pumping main will be 12-in. cast-iron pipe, 6,700 ft. At Station B the collecting basin will have about 400,000 gallons capacity and pumps 750,000 gallons in 24 hrs. Pumps will be direct-connected to gasoline engines. Pumping main will be 10-in. cast-iron pipe about 3,000 ft. long.

Bids will be opened Monday, May 4, at 4 p. m.

CHESTER E. ALBRIGHT, Civil Engr.,

SEWER SYSTEM.

Cape May, N. J., Mar. 24, 1903.

Sealed proposals will be received by the City Council of the City of Cape May, N. J., in council assembled, on Tuesday, April 28, 1903, at 8 o'clock p. m., for the construction of a Sewer System, approximately three miles in length.

Each bid must be accompanied by a certified check of $1,000, payable to the City Treasurer of the City of Cape May, as a guarantee that the contract will be entered into if the bid is accepted. A surety bond of $24,000 will be required of the contractor.

Plans and specifications can be had upon application to Jno. W. Thompson, Recorder of the City of Cape May, N. J., at a charge of $10, which said sum will be refunded upon the return of the plans and specifications within thirty days atfer the letting. Proposals must be enclosed in sealed envelopes, and each must have plainly written upon it "Proposals," and a statement also of the portion of the work for which it is a proposal.

For further information, apply to Jno. W. Thompson, Recorder of the City of Cape May, N. J.

JOHN HALPIN,
President of Council.

Attest:
JNO. W. THOMPSON, Recorder. 13-5t

WEST POINT, N. Y., April 1, 1903.—Sealed proposals, in duplicate, will be received here until 12 m., May 1, 1903, for building materials, plumbing materials, Hardware, Tools, Paints, Glass, Furnace and Range Parts and other miscellaneous stores specified on schedules to be had upon application here. The right is reserved to reject or accept any or all proposals, or any part thereof. Enclose proposals in envelopes marked "Proposals for Military Supplies," and addressed to Q. M., U. S. M. A. 14-5t

SEALED PROPOSALS will be received at the office of the National Home for Disabled Volunteer Soldiers, 346 Broadway, New York, N. Y., until 12 o'clock M., Thursday, April 30, 1903, and then opened, for furnishing supplies, furniture, appliances, etc., for the equipment of the Hospital at the Mountain Branch, N. H. D. V. S., near Johnson City, Tenn. Copies of instructions and specifications together with blank proposals and other information may be had upon application to MOSES HARRIS, General Treasurer, 346 Broadway, New York, N. Y. 15-3t

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

LIFT BRIDGE PLANS.

NOTICE TO BRIDGE ENGINEERS.

Saginaw, Mich.

The Board of Public Works of the City of Saginaw, Mich., will receive until 7:30 p.m., on Thursday, April 16th, 1903, at its office in the City of Saginaw, Mich., competitive plans for a Lift Bridge.

From the accepted plan will be constructed a bridge across the Saginaw River, in the City of Saginaw, Mich., said river being a navigable stream, and under control of the Engineering Department of the U. S. A.

The engineer or bridge company furnishing the plan that is accepted by the Board of Public Works and approved by the Common Council, will be paid therefor the price named in his proposal.

One-third to be paid when design is accepted; one-third to be paid when complete detail plans for foundation and shop drawings are furnished and approved by the Board of Public Works; one-third when the bridge is completed and accepted and the workings thereof satisfactorily demonstrated to the Board of Public Works.

For the second best design the owners will be paid the sum of $300.00.

For the third best design the owner will be paid the sum of $200.00.

The owner of the accepted design, if the same is covered by letters patent or otherwise, shall furnish the Board of Public Works evidence of the fact, and that he has the right to sell same, and that the price bid for furnishing the design and complete detailed plans and specifications therefor, also includes to the Board of Public Works for the City of Saginaw, the right to acquire and own such plans and specifications, and the right to construct a bridge at Genesee Ave. across the Saginaw River, in accordance therewith, and to maintain and operate the same.

Each competitor shall furnish:

Complete strain sheets, plans and specifications for the bridge and foundations and such full detail drawings as will clearly show the dimensions of all parts, manner of construction, and the sectional area, also the dead load or weight assumed in the calculations;
The cubic yards of masonry;
The tons of metal classified as to machinery, floor system and main girders;
Number and length of piles;
Feet, B. M., timber, substructure and superstructure separately;
Number of motors and electrical HP.;
Estimated cost of complete substructure and superstructure;
Style of bridge shall be a full deck;
Plans shall provide for a clear water way of 90 ft. between abutment protections when bridge is open for the passage of boats;
For a clear roadway of 40 ft.;
For two sidewalks, of 8 ft. in the clear;
For double street car tracks laid 9.5 ft. center to center;
A uniformly distributed moving load of 80 lbs. per sq. ft. of clear sidewalks, and 100 lbs. per sq. ft of clear roadway outside of the cars;
Two 80,000-lb. motor cars, 40 × 8½ ft., having a wheel base for each truck of 6 ft. and 20 ft. center to center of trucks passing on the bridge;
Each arm or leaf of the bridge is to be figured as a cantilever, and no part of the load is to be figured as transmitted from one leaf to the other through the lock;
In the proportioning of the structure, Cooper's 1901 specifications for city highway bridges to be complied with; soft steel to be used throughout;
Sidewalks to be planked with 2-in. yellow pine;
Roadway to be planked with 3-in. white oak and 3-in. yellow pine;
For two motors connected, so that they can be operated by one operator for each arm of the bridge, together or separately;
For each arm of the bridge to be operated by hand power;
The masonry will be so designed so as to transmit 75% of the full load of each arm in any position to an area on piles of ¼ of the total width on each side of the center line of gravity of pier.

Plans shall be furnished on tracings 24 × 36 ins. in size, machinery drawings to be proportionately large to show all details.

The Board of Public Works and the City Engineer will decide on the competitive plans, and the awards will be made in accordance therewith.

Any plan not substantially in compliance with the conditions above stated will not be considered.

Particular attention of competitors is called to the importance of a design that will give the least space between high water and the grade of roadway, and all elevations shown on plans must be with reference to city datum.

All information as to the elevation of low water, high water, present bridge, bottom of the river at site of lift spans, water soundings, mud soundings, cost of materials, etc., will be furnished by R. W. Roberts, City Engineer for the Board of Public Works.

By order of the Board of Public Works.
M. L. DeLAND, President.
W. H. BARTON, Clerk of the Board. 14-2t

SMOKE STACK.

Kansas City, Mo., April 3, 1903.

Sealed bids will be received at the office of the Board of Public Works of Kansas City, Mo., at the City Hall, Kansas City, Mo., until 2 o'clock p. m., of Wednesday, April 15th, 1903, for furnishing all the materials, tools and labor for construction, complete, including foundations, of a Smokestack at Turkey Creek Pumping Station, Kansas City, Mo. Stack to be one hundred seventy-five (175) feet high, above foundations, and eight (8) ft. diameter.

Bids will be received for both brick or steel construction, or a combination of both. All specifications for said work and material, and location of stack is given on plans and all are on file in the office of the Superintendent of Water-Works, in the City Hall, Kansas City, Mo., where the same can be seen.

Bidders must state in their proposal time of guaranteed completion of contract.

The person or persons to whom the contract may be awarded will be required to appear at the office of the Board of Public Works, with acceptable bondsmen or guarantee company, as sureties, and exceute the contract within ten (10) days from the date of the acceptance of their bid. And in case of failure or neglect to do so, he or they will be considered as having abandoned it, and as being in default to the City to the amount of the cash deposited with the City Comptroller, as liquidated damages.

General plans, with sufficient details for the correct understanding of what the bidder proposes to furnish, build, transport, erect, complete, and put in satisfactory operation, must accompany each proposal submitted.

Each bid must be signed by the corporation or individual making the same. And if a firm, then by the individual members of such firm, together with the firm itself. And said bid must be enclosed in a sealed envelope, directed to the Board of Public Works.

No bid will be considered unless the bidder has deposited at or prior to the time of handing in his bid the sum of Two hundred ($200) dollars cash, with the City Comptroller of Kansas City, Mo.; the said cash to be forfeited and retained by Kansas City, and paid into the City Treasury by the City Comptroller as liquidated damages in case the bidder fails to enter into the written contract required by the said Board of Public Works, according to the terms of his bid, within ten (10) days after the acceptance of such bid.

The successful bidder will be required to enter into a contract subject to the approval of the Lower House of the Common Council; and will further be required to furnish satisfactory bond equal to fifty (50%) per cent. of the bid guaranteeing that they will furnish and complete the entire work within the specified time named in their bid; and that in case of failure to complete said work within said time, the bidder shall forfeit to the City the sum of twenty-five ($25) dollars for each and every day required to complete the same after said time.

Said bids will be opened by the Board of Public Works at the office of said Board, between the hours of 2 o'clock and 3 o'clock p. m., of said April 15th, 1903.

The Board reserves the right to reject or accept any bid; and to reject any and all bids, or waive any informality in the bids if they deem it to the City's interest to so do. But no supplemental bid or bids delivered after the hour fixed aforesaid will be considered. 15-1t

NOTICE TO TUNNEL CONTRACTORS.

Sealed proposals, marked "Bid for Tail-Race Tunnel," will be received by the undersigned until noon, May 11th, 1903, for the construction of a Tail-Race Tunnel for the Toronto & Niagara Power Co., of Toronto, Ontario. Plans and specifications for this work are on file and can be seen after March 30th, 1903, at the Company's offices, at Home Life Building, Toronto, Ontario, and Niagara Falls, Ontario, or office of F. S. Pearson, No. 29 Broadway, New York, Room 220. The right is reserved to reject any or all proposals.

FREDERIC NICHOLLS,
Vice-President and General Manager.
14-6t Home Life Bldg., Toronto, Ontario.

TWO DRAWBRIDGES.

NEAR ATLANTIC CITY.

Magnolia, N. J., April 1, 1903.

Sealed proposals are invited to build, for the County of Atlantic, duplicate Steel Drawbridges on the new highway leading from Pleasantville to Atlantic City, in Atlantic County, N. J. Bids will be received at the regular monthly meeting of the Board of Freeholders at the Memorial Hall, in Atlantic City, on Tuesday, May 12, 1903, at 11 a. m., at which time the bids will be opened and publicly read.

The Board reserves the right to reject any or all bids. Each bid must be accompanied with a certified check in the sum of one thousand dollars. Plans and specifications can be seen at the County Clerk's office, in May's Landing, N. J., or will be mailed to any address on receipt of one ($1) dollar, sent to John C. Anderson, Clerk of the Board at May's Landing, N. J.

FRANK ENDERLIN,
Chairman Bridge Committee,
Cologne, N. J.
J. J. ALBERTSON, Atlantic Co. Engr. 15-2t

WATER WORK CONTRACTORS.

Agricultural College P. O., Mich.

Sealed proposals will be received at the office of the Secretary of the State Board of Agriculture up to 6 o'clock p. m., April 14th, for furnishing material and constructing a Water-Works Distributing System at Agricultural College, Michigan.

The work contemplated is approximately as follows:

Furnishing and laying a total of about 8,000 ft. of 8-in., 6-in. and 4-in. Cast-iron Water Pipe and necessary Special Castings;
Furnishing, installing and connecting about 24 Hydrants;
Furnishing, installing and connecting sundry main and blow-off Valves.

Specifications and blank form of proposal may be procured at the office of the Secretary of the Board. Plans may be seen at the office of Chas. L. Weil. Plans and specifications will not be furnished through the mail and bidders are expected to examine the location for themselves. The right is reserved to reject any or all bids. 15-1t

A. M. BROWN,
Secretary State Board of Agriculture.
Agricultural College, Mich., April 6, 1903.

TREASURY DEPARTMENT.—Office of the Supervising Architect, Washington, D. C., March 26, 1903.—Notice is hereby given that the time for opening the bids for the completion of the U. S. Post Office building at Richmond, Ky., has been extended from April 8, 1903, to 3 o'clock p.m. April 27, 1903. JAMES KNOX TAYLOR, Supervising Architect. 14-1t

TREASURY DEPARTMENT.—Office of the Director of the Mint, Washington, D. C., March 25, 1903.—Sealed proposals will be received at this office until 2 o'clock p. m., on the 28th day of April, 1903, and then opened, for the installation of an Electric Light and Power Plant in the U. S. Mint building, Denver, Colo. Copies of the specification may be obtained at this office, at the discretion of the Director of the Mint. R. E. PRESTON, Acting Director of the Mint. 14-4t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., March 31, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p. m. (Mountain time), May 1st, 1903, and then opened, for furnishing all material and labor necessary for the construction of about 1,850 ft. of 6-in. Sewer at Fort D. A. Russell, Wyo. Full information, blank forms, plans and specifications furnished on application to this office; also to the office of the Chief Quartermaster, Chicago, St. Paul, Omaha, Ft. Riley, Kan., and Denver. United States reserves the right to accept or reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposal for Sewer System at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 14-4t

TREASURY DEPARTMENT.—Office of the Supervising Architect, Washington, D. C., March 31, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m., on the 6th day of May, 1903, and then opened, for the construction (except heating apparatus and electric wiring and conduits) of the U. S. Post Office at Norwich, Connecticut, in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Postmaster at Norwich, Conn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 14-2t

U. S. ENGINEER OFFICE, Army Building, New York, N.Y., March 16, 1903.—Sealed proposals for Dredging at Port Chester, Mamaroneck, Bronx River, Eastchester Creek, Port Jefferson, Huntington, Flushing Bay, and repairing Stone Breakwater at Glencove, N. Y., will be received here until 12 m., April 15, 1903, and then publicly opened. Information furnished on application. AMOS STICKNEY, Col., Engrs. 12-4t

DRAINAGE WORK.

Tomah, Wis.

Sealed proposals will be received by the Lemonweir River Drainage District of Monroe and Juneau counties, Wisconsin, up to 8 a.m. of the 15th day of May, 1903, for the digging of the mains and laterals of said district. Each bid must be accompanied by a certified check for 5% of bid. The right to reject any and all bids is expressly reserved. Plans may be seen and specifications obtained by application to WM. S. FRYER,
14-3t Tomah, Wis.

U. S. ENGINEER OFFICE, Army Building, New York, March 24, 1903.—Sealed proposals for furnishing material and building a Riprap Bulkhead southwest of Governor's Island, New York Harbor, will be received at this office until 12 m. April 23, 1903, and then publicly opened. Information on application. W. L. MARSHALL, Major, Engrs. 15-4t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., April 1, 1903.—Sealed proposals for Dredging in Narrows of Lake Champlain, Vt., and Plattsburg Harbor, N. Y., will be received here until 12 m., May 1, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Captain, Engrs. 14-4t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., April 2, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p.m. (Mountain time), May 2, 1903, and then opened, for furnishing all material, machinery, tools and labor necessary for sinking at least two (2) and not exceeding six (6) tubular deep wells at Fort D. A. Russell, Wyoming. Specifications, instructions to bidders, and blank forms of proposal furnished on application to this office; also to the office of the Chief Quartermaster, Chicago, Omaha, St. Paul, and Denver. United States reserves the right to reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposals for Sinking Wells at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 14-4t

TREASURY DEPARTMENT.—Office of the Supervising Architect, Washington, D. C., March 26, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 4th day of May, 1903, and then opened, for the construction (including plumbing, electric wiring and conduits) of the extension of the U. S. Custom House, Court House, and Post Office at Memphis, Tenn., in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Custodian at Memphis, Tenn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect 14-2t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., April 8, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p. m., Mountain time, May 8, 1903, and then opened for furnishing all material and labor necessary to extend the present Water System at Fort D. A. Russell, Wyo., consisting of about 9,100 ft. of 6-in. and 1,450 ft. of 4-in. cast-iron pipe, including the necessary valves and fire hydrants. Bidders must state in their bids the time in which they will complete the work as time will form an important factor in making the award. Full information, blank forms, plans and specifications furnished on application to this office; also to the office of Depot Quartermaster, Omaha, St. Paul, Chicago, New York, Philadelphia, Jeffersonville, Ind., St. Louis, Fort Leavenworth, Kan., and Denver. United States reserves the right to accept or reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposals for Water System at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 13-4t

U. S. ENGINEER OFFICE.—Washington Barracks, D. C., April 1, 1903.—Sealed proposals for Portland and natural cement, sand, gravel, construction of roads and sidewalks, including grading and retaining walls, sewers, drains and water supply system, at Washington Barracks, D. C., will be received at this office until noon, April 30, 1903, and then publicly opened. Information furnished on application. JOHN STEPHEN SEWELL, Captain Engineers, Acting Q. M., U. S. A. 14-4t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., April 6, 1903.—Sealed proposals for repair of Piers at St. Joseph and Black Lake, Mich., will be received here until 3 p. m. May 6 1903, and then publicly opened. Information furnished on application. J. G. WARREN, Major, Engrs. 15-4t

OFFICE OF THE ENGINEER IN CHARGE IMPROVEMENT OF THE PORT.—Manila, P. I., February 15, 1903.—Sealed proposals for constructing an additional Breakwater at Manila, P. I., will be received at this office until 11 o'clock a. m., June 15, 1903, and then publicly opened. Work to be done includes about 450,000 tons of 2,240 lbs. each, of rock filling in water of approximately 30 ft. depth. Bids must be accompanied by a bond of $50,000 U. S. currency. One contract will be made for the whole work. Contractor's bond will be for 10% of the amount bid. The right is reserved to reject any or all bids. For specifications and blank forms, apply to this office, the U. S. Engineer Office, Room "H," Army Bldg., New York City, N. Y.; the U. S. Engineer Office, 1637 Indiana Ave., Chicago, Ill.; or the U. S. Engineer Office, Room 41, Flood Bldg., San Francisco, Cal. CLINTON B. SEARS, Major, Corps of Engrs., U. S. Army, In Charge. 11-9t

For Proposals see pages XXXI., XXXII. of Advertisements and pages 204, 205 of Supplement.

PIPE LINE.

Kansas City, Mo., April 3, 1903.

Sealed proposals will be received at the office of the Board of Public Works, at the City Hall, Kansas City, Mo., until 2 o'clock p. m., of Wednesday, the 15th day of April, 1903, for furnishing all material and labor necessary for constructing and completing ready for service the following described work, viz.:

Item 1.—A thirty-six (36) inch cast-iron pipe, Class A, weight four hundred seventy-five (475) pounds per ft., approximate distance eighteen thousand (18,000) lin. ft.

Item 2.—A forty-eight (48) inch inside diameter by one-half (½) inch, also a thirty-six (36) inch by three-eighths (⅜) inch steel riveted and calked pipe line (asphaltum coated), approximate distance eighteen thousand (18,000) lin. ft.

Item 3.—A sixty-six (66) inch concrete and steel aqueduct similar to the Monier or Bonna Systems, approximate distance eighteen thousand (18,000) ft.

NOTICE TO BIDDERS.

Each bid shall be signed by the bidder, enclosed in a sealed envelope, and directed to said Board of Public Works.

General specifications showing kind of materials, workmanship, etc., desired, and route also, detail instructions to bidders and form of contract to be entered into by successful bidder, may be seen at the said office of said Board of Public Works.

Bids will be received for the above work separately on each item, as above specified.

Bids will be received for doing all of the work, furnishing all material, tools and labor necessary for the entire completion of the same.

Bids will also be received for furnishing all labor and tools necessary for the entire construction of any of the above items; the City to furnish all other material, except lead and yarn, lumber or timber.

Bidders will be required to furnish plans and specifications, with guarantee as to the durability, etc., on Item No. 3.

The person or persons to whom the contract may be awarded will be required to appear at the office of the Board of Public Works, with acceptable bondsmen or guarantee company as sureties, and execute the contract within ten (10) days from the date of the acceptance of their bids; and in case of failure or neglect so to do, he or they will be considered as having abandoned it, and as being in default to the City to the amount of the cash deposited with the proposal, as liquidated damages.

General plans with sufficient details for the correct understanding of what the bidder proposes to furnish, build, transport, erect, complete and put in satisfactory operation, must accompany each proposal submitted.

Each bid must contain the name of the corporation or individual making the same. And if a firm, then the individual names composing the firm, together with the firm name.

No bid will be considered unless the bidder has deposited at or prior to the time of handing in his bid the sum of two hundred ($200) dollars in cash with the City Comptroller of Kansas City, Mo.; the said cash to be forfeited and retained by Kansas City, and paid into the City Treasurer by the City Comptroller, as liquidated damages in case the bidder fails to enter into the written contract required by the said Board of Public Works, according to the terms of his bid, within ten (10) days after the acceptance of such bid.

Bidders for Item No. 3 must state in their bids the shortest time they will guarantee the completion of the work.

The work provided for in Item No. 1 and No. 2 must be completed within one hundred and twenty (120) days from the date of confirmation of the contract. Time being the essence of this contract, bids will be considered accordingly.

The successful bidder will be required to enter into contract subject to the approval of the Lower House of the Common Council; and will further be required to furnish a satisfactory bond equal to fifty (50) per cent. of the bid, guaranteeing that they will furnish and complete the entire work within the specified time named in their bid; and that in case of failure to complete said work within said time, the bidder shall forfeit to the City the sum of two hundred ($200) dollars for each and every day required to complete the same, after the time fixed in said bid.

All bids will be opened on April 15, 1903, between the hours of two and three o'clock p. m., by the Board of Public Works at their said office.

The Board reserves the right to reject or accept any bid; and to reject any or all bids, or waive any informality in the bids, if they deem it to the City's interest to do so. 15-1t

ASPHALT PAVING.

Office Board Street, Sewer and Drain Commissioners,
Norfolk Va.

Sealed proposals will be received at this office on May 14, 1903, at 12 o'clock noon, and immediately thereafter opened, for laying about twenty-two (2,200) hundred sq. yds. of Asphalt Paving on Clay St., in this City.

Forms of proposals, instructions to bidders and specifications for the work may be obtained on application to W. T. Brooke, City Engineer, or B. Gray Tunstall, Chairman of the Board. Each bid must be accompanied by a certified check, payable to H. S. Herman, City Treasurer, in the sum of three hundred ($300) dollars, as a guarantee of the good faith of the bidder, which check shall be forfeited as liquidated damages to the City of Norfolk, Va., in the event of the failure or refusal of the successful bidder to enter into a contract within ten days after the same is awarded him.

A satisfactory bond in the sum of eighteen hundred dollars will be required of the contractor.

The right to reject any or all bids is specially reserved.

B. GRAY TUNSTALL,
Chairman Boards of Street, Sewer and Drain Commissioners.
15-2t

HAULING AND LAYING WATER PIPE.

Office of the
Water Commissioners, City of Norwalk,
No. 44 Wall St.,
Norwalk, Conn., April 6, 1903.

Sealed proposals will be received at this office until 5 o'clock p. m. of Wednesday, April 22d, 1903, for hauling and laying a 16-in. supply main from Daniels' Corner in the Town of New Canaan to the City of Norwalk,—approximate length, 25,000 lin. ft.

Plans and specifications can be seen, and all necessary information obtained at this office, on and after April 8th, 1903.

Each proposal must be accompanied by cash or a certified check for $300, as a guarantee that the bidder, if successful, will execute the contract and file the required bond, said check to be made payable to the Treasurer of the City of Norwalk, Conn.

All bids will be publicly opened at this office at 5 o'clock p. m., of April 22d, 1903.

The Board of Water Commissioners reserve the right to reject any or all proposals, or to accept any that, in their judgment, will be for the best interests of the City.

All bids must be endorsed with the bidder's name on the outside of the envelope, and marked "Proposal," and addressed to Frederick Buckley, Secretary.

By order of the Board of Water Commissioners.

FREDERICK BUCKLEY,
15-1t Secretary.

BEACH DRIVE, BULKHEAD AND BOARDWALK.

Cape May, N. J., Mar. 24, 1903.

Sealed proposals will be received by the City Council of the City of Cape May, N. J., in council assembled, on Tuesday, April 28, 1903, at 8 o'clock p. m., for the construction of a Beach Drive, a Bulkhead and a Boardwalk, approximately 12,500 ft. in length.

Each bid must be accompanied by a certified check of $1,000, payable to the City Treasurer of the City of Cape May, as a guarantee that the contract will be entered into if the bid is accepted. A surety bond of $25,000 will be required of the contractor.

Plans and specifications can be had upon application to Jno. W. Thompson, Recorder of the City of Cape May, N. J., at a charge of $10, which said sum will be refunded upon the return of the plans and specifications within thirty days after the letting. Proposals must be enclosed in sealed envelopes, and each must have plainly written upon it "Proposals," and a statement also of the portion of the work for which it is a proposal.

For further information, apply to Jno. W. Thompson, Recorder of the City of Cape May, N. J.

JOHN HALPIN,
President of Council.
Attest:
JNO. W. THOMPSON, Recorder. 13-5t

HARBOR IMPROVEMENTS.

The Government of Jamaica is prepared to receive tenders for the Improvement of the Harbor of Falmouth, in the Island of Jamaica, in the manner hereinafter described.

The work to be executed under the proposed contract consists of the excavation and removal of

(1) The submerged rock in the entrance to the said harbor, known as the "Triangular Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(2) Two spurs of the main reef on the west side of the said entrance, back to a line fifty (50) feet distant from and parallel to a line running S. 35° W. from the center of the said Triangle Rock, and to a depth of five (5) fathoms below low water of Spring Tides.

(3) The submerged rock on the east side of the ship channel into the harbor known as the "Hopewell Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(4) The submerged rocks in the side harbor, known as the "Inner Shoal" and the "Middle Shoal," respectively, to a depth of five (5) fathoms below low water of Spring Tides.

(5) The submerged rock in the harbor known as the "Harbor Rock," to a depth of four (4) fathoms below low water of Spring Tides.

The following will be the conditions of the proposed contract:

1. The work shall be so executed and completed that after its completion there shall be at all points inside the five (5) fathom line enclosing the harbor its ship channel and entrance, a depth of not less than (5) five fathoms below low water of the Spring Tides.
2. The contractor shall not deposit or allow to be deposited any solid matter in any part of the harbor where the depth of water is now less than five (5) fathoms at low water of Spring Tides, and shall remove at his own expense such matter, if any, as shall be so deposited through any act of his or of any of his servants or agents.
3. Payment will be made to the contractor at such times and in such manner as shall be agreed upon before signing the contract.
4. Plant, tools and materials to be used exclusively for the purposes of this contract will, if consigned to the Director of Public Works and kept under the supervision and in accordance with the regulations of the Revenue Department, be admitted free of import duty.
5. The whole of the work included in the contract shall be completed within six months after the date of the contract, and as time is of the essence of the contract, there shall be a deduction made from the contract sum of £5 for every day in excess of the contract time, as liquidated damages and not in the nature of a penalty.
6. The contractor and two approved sureties will be required to enter into a joint and several bond to His Majesty the King for a sum of £1,000 for the due performance of the contract.

All the information on the subject of the harbor and the work to be done possessed by the Government of Jamaica may be obtained at the Office of the Director of Public Works in Kingston, Jamaica, but the Government will not guarantee the accuracy of any such information, nor be held responsible should the contractor suffer loss or injury through incorrect or insufficient information.

The rock to be excavated is believed to be chiefly, if not entirely, of coral formation, and the cubic contents of the excavation to be done has been estimated as follows, that is to say:

Triangle rock	300	cu. yds.
Spur No. 1.....	550	" "
Spur No. 2.....	400	" "
Hopewell Rock	1,500	" "
Middle Shoal	7,500	" "
Inner Shoal	5,700	" "
Harbor Rock	500	" "
Total.....	16,450	" "

Tenders must be delivered at the office of the Director of Public Works, Kingston, Jamaica, West Indies, in sealed envelopes, addressed to him and marked outside "Tender for Falmouth Harbor Improvement," on or before the 20th day of May, 1903. 12-6t

U. S. ENGINEER OFFICE, New London, Conn., March 23, 1903.—Sealed proposals, in triplicate, for Dredging in Quinnipiac and Mill rivers, New Haven Harbor, Conn., will be received here until 12 noon, April 23, 1903, and then publicly opened. Information on application. CHAS. F. POWELL, Maj., Engrs. 13-4t

U. S. ENGINEER OFFICE, Army Building, New York, March 19, 1903.—Sealed proposals for Dredging in Buttermilk Channel and in Gowanus Creek, New York Harbor, will be received here until 12 m., April 20, 1903, and then publicly opened. Information on application. W. L. MARSHALL, Major, Engrs. 12-4t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., March 20, 1903.—Sealed proposals for Dredging in Beverly and Manchester harbors, Mass., will be received here until 12 m., April 20, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Capt., Engrs. 13-4t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., March 25, 1903.—Sealed proposals for furnishing Portland Cement, Sand and Broken Stone, will be received here until 12 m., April 25, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Capt., Engrs. 13-4t

U. S. ENGINEER OFFICE, Duluth, Minn., March 12, 1903.—Sealed proposals for furnishing 6,000 bbls. Portland Cement for Concrete Superstructure to Breakwater at Marquette, Mich., will be received here until noon, April 11, 1903, and then publicly opened. Information on application. D. D. GAILLARD, Capt., Engrs. 12-4t

U. S. ENGINEER OFFICE, 2001 I St, N.W., Washington, D. C., March 13, 1903.—Sealed proposals for furnishing and placing Riprap Stone in dikes in Occoquan Creek, Va., will be received here until 12 o'clock noon, April 14, 1903, and then publicly opened. Information furnished on application. CHAS. J. ALLEN, Lieut.-Col., Engrs. 12-4t

U. S. ENGINEER OFFICE, 537 Congress St., Portland, Me., March 14, 1903.—Sealed proposals for Dredging in Camden Harbor, Me., will be received here until 12 m., April 14, 1903, and then publicly opened. Information furnished on application. S. W. ROESSLER, Maj., Engrs. 12-4t

U. S. ENGINEER OFFICE, Portland, Ore., March 25, 1903.—Sealed proposals will be received here for 475,000 tons, more or less, Stone for Extension of Jetty at mouth of Columbia River, Oregon and Washington, until 11 a. m., April 30, 1903, and then publicly opened. Information on application. W. C. LANGFITT, Capt., Engrs. 13-3t 17-1t

U. S. ENGINEER OFFICE, Duluth, Minn., Mar. 25, 1903.—Sealed proposals for furnishing 7,000 cu. yds. Broken Stone and 4,000 cu. yds. Sand for concrete superstructure to breakwater, Marquette, Mich., will be received here until noon, April 24, 1903, and then publicly opened. Information on application. D. D. GAILLARD, Capt., Engrs. 13-4t

U. S. ENGINEER OFFICE, Nashville, Tenn., March 18, 1903.—Sealed proposals for construction, delivery, etc., of 4 pairs Steel Lock Gates, Filling Valves, etc., for Locks A and No. 1, Cumberland River, will be received here until 11 a. m., standard time, April 22, 1903, and then publicly opened. Information furnished on application. M. B. ADAMS, Lieut.-Col., Engrs. 12-4t

ENGINEER OFFICE, U. S. Army, Room 2, Custom House, Norfolk, Va., March 6, 1903.—Sealed proposals for Dredging Hampton Roads, Va., will be received here until 12 m., April 15, 1903, and then publicly opened. Information furnished on application. 13-2t-eow

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CONTINUED ON PAGE 159.

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Main Belting Co, 1219 Carpenter st, Philadelphia

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Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
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Warren City Tank & Boiler Works, Warren, O

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Babcock & Wilcox Co, 29 Cortlandt st, New York
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Church, Isaac, Toledo, O
Evans, F H, 586 Kent ave, Brooklyn
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Putman, H J, & Co, 38 Bridge sq, Minneapolis

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Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)

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Cayuta Wheel & Foundry Co, Sayre, Pa
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Brill, J G Co, Philadelphia, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Koppel, Arthur, 68 Broad st, New York
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel, Arthur, 68 Broad st, New York

Cars (Wrecking & Ditching.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y

Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa

Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburg, N Y
Columbia Machine Works, 247 Chestnut st, Brooklyn
Crane & Co, Inc, A M, The Rookery, Chicago
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 239 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)

Castings (Steel.)
Crane & Co, Inc, A M, The Rookery, Chicago

Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 45 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co, Warners, N Y
Fredenburg & Lounsbury, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N
Giant Balls Portland Cement Co, Glens Falls, N Y
Hartranft, Wm G, Cement Co, Philadelphia
Helderberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Sinclair & Babson, 45 Broadway, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, St Louis
Thorn Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 160 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del

Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement & Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Akron Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky

Cement Kilns and Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark, J C, Box 525, Atlanta, Ga
Dodge Mfg Co, Mishawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 66 Maiden Lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
West Pulverizing Mach. Co, Jersey City, N J

Cement Mixer.
Alexander Iron Works, Syracuse, N Y

Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York

Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y

Chain-Making Machinery.
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill

Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)

Chimneys. (Brick.)
Custodis, A, Chimney Const'n Co, Bennett bldg, N Y

Coal and Ore Handling Machinery.
Aultman Co, Canton, Ohio
Bacon, Earle C, 26 Cortlandt st, New York
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Brown Hoisting Machinery Co, Cleveland, O
Exeter Machine Works, Pittston, Pa
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, Ohio
King Bridge Co, Cleveland, Ohio
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, N Y
Link Belt Engineering Co, Nicetown, Phila
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, New York
N. J. Foundry & Machine Co, 9 Murray st, New York
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Robins Conveying Belt Co, 14-21 Park Row, N Y
Simpson, H S, Mfg'g Agt, Electric bldg, Cleveland
Steubner, G L, 176 Third st, Long Island City, N Y

Colleges (Engineering.) (see page IV.)

Concentrators.
Allis-Chalmers Co. Home Ins bldg, Chicago

Concrete Mixers.
Clyde Iron Works, Duluth, Minn
Cockburn Barrow & Mach. Co, Jersey City, N J
Contractor's Plant Co, 37 Pittsburg st, Boston
Drake, C T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington
Iroquois Iron Works, Buffalo
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
McKelvey Concrete Mach'y Co, Security bldg, Chicago
Municipal Eng & Contr'g Co, Manhattan bldg, Chicago
Ransome Concrete Mach'y Co, 11 Broadway, N Y
Smith, T L, 134 Tenth st, Milwaukee

Concrete Building Apparatus.
Farrell, Thos C, Washington, New Jersey

Condensers.
Alberger Condenser Co, 95 Liberty st, N Y
Allis-Chalmers Co, Home Ins bldg, Chicago
Davidson M T, 58 Keap st, Brooklyn, N Y
Dean Bros, Steam Pump Works. Indianapolis, Ind
Epping-Carpenter Co, Pittsburg
Guild & Garrison, So 10th st, Brooklyn, N Y
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Conduits (Pipe.)
American Vitrified Conduit Co, 170 Broadway, N Y
Blackmer & Post Pipe Co, St. Louis, Mo
Camp, H B, Co, 170 Broadway, New York
Eppinger & Russell Co, 66 Broad st, New York
Field, C J, 29 Broadway, New York
Standard Vitrified Conduit Co, 39 Cortlandt st, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Contractors.
Abbot-Gamble Contracting Co, St. Louis and N Y
American Pipe Mfg Co, 112 N Broad st, Philadelphia
Bates & Rogers Const'n Co, 1205 Manhattan bldg, Chic
Cook Well Co, St. Louis, Mo
Eastern Construction Co, 48 Classon ave, Brooklyn, NY
Eichleay, John, Jr, Co, Pittsburg
Esson, W A, & Co 1137 Stock Exchange bldg, Chicago
Foundation & Contracting Co, 37 Nassau st, New York
Gahagan, W H, 169 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 15-21 Park Row bldg, N Y
O'Rourke, John F, Park Row bldg, New York
Philippine Eng & Const'n Co, P.O. Box 572, Manila, P.I
Phillips & Worthington, 11 Broadway, New York
Quigley, R M, & Co, Laclede bldg, St. Louis, Mo
Regan & Mulock, D P, 4429 Chestnut st, Philadelphia
Snare & Triest, 39 Cortlandt st, New York
United Eng & Con Co, 13-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)

Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Crane & Co, Inc, A M, The Rookery, Chicago
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia

Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)

Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 53 Keap st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y

Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co, Marion, Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st. Milwaukee
Wood, R D, & Co, Philadelphia, Pa

Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia

Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 13 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
International Creosoting & Con. Co, Galveston, Tex
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote W'ks, W Pascagoula, Miss
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J

Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston

Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul, Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dobbie Foundry & Machine Co, 138 Dey st, N Y
Hayward Co, 97 Cedar st, New York
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J

Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago

Differential Hoists.
Boston & Lockport Block Co, Boston, Mass

Ditching and Excavating Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works Co, Toledo
Western Wheeled Scraper Co, Aurora, Ill

Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Lowe Wrecking & Diving Co, 2 Coenties slip, N Y

Diving Apparatus.
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York

Docks (Composite and Steel Floating).
Crandall, H I, & Son Co, East Boston, Mass

Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y

Drafting Tables.
Hein Furniture Co, Toledo, O

Draftsmen's Supplies. (see Instruments.

Drain Tile (see Pipe, Vitrified Clay.)

Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bowers, A B San Francisco, Cal
Bucyrus Co, S Milwaukee, Wis
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Falcon, Jos, G, 1110 Ayres Court, Evanston, Ill
Featherstone Foy & Mach Co, 348 N. Halsted, Chicago
Hayward Co, 97 Cedar st, New York
Lawrence Machine Co, Lawrence, Mass
Marion Steam Shovel Co, Marion, Ohio
Morris Machine Works, Baldwinsville, N Y
Mundy, J S, Newark, N J
Osgood Dredge Co, Albany, N Y
Smith, Theo., & Bro, Jersey City, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works Co Toledo

Drilling and Boring Machines (Portable).
Knight Mfg Co, Canton, Ohio
Philadelphia Pneumatic Tool Co, Philadelphia
Stow Flexible Shaft Co, 36th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
(see also Pneumatic Tools; also Rock Drills.

Drop Forgings.
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila

Drop Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Dry Docks (Marine Railway).
Crandall, H I, & Son Co, East Boston, Mass

Dryers (Cement).
American Process Co, 62 William st, New York
Bartlett, C O, & Snow Co, Cleveland, O
Crown Dryer Co, 120 Euclid ave, Cleveland
Cummer, F D, & Son Co, Cleveland, O
Ruggles Coles Engineering Co, 41 Cortlandt st, N Y
Simpson, H S, Mfg's Agt, Electric bldg, Cleveland
West Pulverizing Machine Co, Jersey City, N J

Dynamite (see Explosives).

Dynamos.
C & C Electric Co. Central R R bldg, New York
Coho & Co, H B, 114 Liberty st, New York
General Electric Co, Schenectady, N Y
Storey Motor & Electric Co, Harrison, N J
Stow Mfg Co, Binghamton, N Y
Westinghouse Electric & Mfg Co, Pittsburg, Pa

Economizers (Fuel).
Green Fuel Economizer Co, Matteawan, N Y
Broomell, Schmidt & Steacy Co, York, Pa

Electric Storage Batteries.
Electric Storage Battery Co, Philadelphia

Elevators.
Marine Engine & Machine Co, 1123 Broadway, N Y
Morse Elevator Works, Philadelphia
Otis Elevator Co, 71 Broadway, N Y

Employment Bureaus.
Boston Engineering Agency, 7 Water st, Boston
Brotherhood Steam Shovel & Dredge Engrs., Chicago
Cleveland Engineering Agency, Box 71, Sta. B, Cleve
Engineering Agency, Monadnock blk, Chicago, Ill
Engineering Employment Bureau, Syracuse N Y
Hapgood Bureau, 257 Broadway, N Y
New York Engineering Agency, 35 Warren st, N Y

Engines. (Gas and Gasoline).
American Well Works, Aurora, Ill
Backus Water Motor Co, Newark, N J
Chase Machine Co, Cleveland
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Mietz & Weiss, 128 Mott st, New York
New Era Iron Work Co, 37 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, T W, (Otto Engine) 369 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Struthers-Wells Co, Warren, Pa
Temple Pump Co, 13th Place, Chicago
U. S Wind Eng. & Pump Co, 20 Water st, Batavia, Ill
(see also Engines, Oil.)

Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Chase Machine Co, Cleveland
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Fairbanks, Morse & Co, Chicago, Ill
Flory, S, Mfg Co, Bangor, Pa
Hunt, C W., Co, Richmond Terrace, W N Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 813 Carroll ave, Chicago
Mundy, J S, Newark, N J
Potter Mfg Co, 240 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

Engines (Marine).
Buffalo Forge Co, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil)
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Port Huron Engine Co, Port Huron, Mich

Engines (Steam).
Allis-Chalmers Co. Home Ins bldg, Chicago
Buffalo Forge Co, Buffalo, N Y
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Foy & Mach Co, 348 N. Halsted, Chicago
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas. & Co, Springfield, O
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co, Warren, Pa
Vulcan Iron Works, Wilkesbarre Pa

Engines (Traction).
Aultman Co, Canton, O
Heisler, Chas. L, Erie, Pa
Kelly O S Co Springfield, O
Port Huron Engine Co, Port Huron, Mich

ADVERTISERS' CLASSIFIED DIRECTORY.

Excavators and Excavating Machinery
(see Ditching and Excavating Machinery and Steam Shovels.)

Expanded Metal.
Assoc Exp Metal Cos, Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 40 Gold st, New York
Youngstown Iron & Steel Roofing Co, Youngstown, O

Explosives.
Explosives Mfg Co, Elmira, N Y
Electric Exploder Co, 120 Liberty st, N Y
Kirk, Arthur & Son, Co, 910 Duquesne Way, Pittsburg

Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank L, & Co, 25 Church st, New York
Robertson, Jas L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O

Feed Water Purifiers.
Industrial Water Co, 126 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J

Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
Jones National Fence Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich

Fillet. (Leather).
Butler, A G, 284 Pearl st, New York

Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O

Filter Presses.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Filters.
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
Maignen Filtration Co, 1310 Arch st, Philadelphia
N Y Continental-Jewell Co, 15 Broad st, N Y
Norwood Engineering Co, Florence, Mass
Pittsburg Filter Mfg Co, Pittsburg, Pa
Ross Valve Co, Troy, N Y
Scaife, Wm. B, & Sons Co, Pittsburg

Filters (Oil).
Burt Mfg Co, Akron, O
Robertson, Jas L, & Sons, 192 Fulton st, New York

Fire Department Supplies.
Morse, Andrew J, & Son, 140 Congress st, Boston, Mass

Fire Proofing.
Aberthaw Construction Co, Boston, Mass
Berger Mfg Co, Canton, O
Bromley, A H, Jr, 112 N Broad st, Philadelphia
Hennebique Patents 1123 Broadway, N Y
Metropolitan Fire Proofing Co, Trenton, N J
Roebling Construction Co, 121 Liberty st, New York
St Louis Expanded Metal Fireproofing Co, St Louis
Wight, W N, & Co, 160 Fifth ave, New York
(see also Expanded Metal, also Concrete Steel Construction.)

Fire Proofing (Hollow Tile).
Maurer, Henry & Sons, 422 E 23d st, New York

Fire Proofing (Wood).
Electric Fireproofing Co, 19th st, and East River, N Y

Fittings (Flanged).
McLeod Co, 95 Liberty st, New York

Flexible Pipe Joint.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich

Flexible Shafts.
Stow Flexible Shaft Co, 16th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y

Flue Lining (Fire Clay).
Jackson, John H, Albany, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th sts, N Y
Syracuse Stoneware Co, Syracuse, N Y

Flush Tanks.
Pacific Flush Tank Co, 48 La Salle st, Chicago

Fly Wheels.
Poole, Robert, & Son Co, Baltimore, Md

Forges (Portable).
Buffalo Forge Co, Buffalo, N Y
Roots, P H & F M, Co, Connersville, Ind
Tate, Jones & Co, Pittsburg Pa

Forgings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Baker, Jas H, Mfg Co, 503 Park bldg, Pittsburg, Pa
Brill, J G, Co, Philadelphia, Pa
Cleveland City Forge & Iron Co, Cleveland
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila
Pennsylvania Steel Co, Steelton, Pa

Friction Clutches.
Brown Hoisting Machinery Co, Cleveland
Dodge Mfg Co, Mishawaka, Indiana
Link Belt Engineering Co, Nicetown, Philadelphia
Smith, S Morgan, Co, York, Pa

Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Fuel Economizers (see Economizers).

Furnaces (Gas).
American Gas Furnace Co, 23 John st, New York

Furnaces (Oil).
Petroleum Iron Works, Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg

Furniture (Steel).
General Fireproofing Co, Youngstown, O

Gages (Steam).
Crosby Steam Gage & Valve Co, Boston

Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York

Galvanizing Kettles.
Columbiana Boiler Co, Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio

Garbage Dump Carts (see Wagons and Carts).

Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y

Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Gas Holders.
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)

Gas Machinery.
American Gas Furnace Co, 23 John st, New York
Gas Machinery Co, Cleveland, O
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works, South Norwalk, Conn
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa

Gas Works.
Gas Machinery Co, Cleveland, Ohio

Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U. S. Mineral Wool Co, 143 Liberty st, New York

Gates (Railway).
Jones National Fence Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y

Gearing.
Caldwell, H W, & Son Co, Chicago
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith S. Morgan, Co, York, Pa

Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J

Gloves (Hand Made).
Luther, J P, Glove Co, 526 Pearl St, Berlin, Wis

Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Graders.
Austin Mfg Co Manhattan bldg, Chicago
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Grain Elevators (see Tanks, grain storage.)

Granite (see Stone, also Paving Blocks).

Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos., Crucible Co, Jersey City, N J
Goheen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Grate Bars.
Dobbie Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York

Greenhouses.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J

Hanger (Joist).
Duplex Hanger Co, Cleveland, Ohio

Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3876 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago

Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass

Hoisting Engines (see Engines, Hoisting).

Hoisting and Conveying Machinery.
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cresson Co, Geo. V, Philadelphia
Carson Trench Machine Co, Boston, Mass
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M, Co, Bay City, Mich
Hunt, C W, Co, Richmond Terrace, W N Brighton NY
Jeffrey Mfg Co, Columbus, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Lambert Hoisting Engine Co, Newark, N J
Link Belt Engineering Co, Nicetown, Philadelphia
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, N Y
Pawling & Harnishfeger, 167 Clinton st, Milwaukee
Robins Conveying Belt Co, 14-21 Park Row, N Y
Steel Cable Engineering Co, 120 Liberty st, New York
Trenton Iron Co, Trenton, N J
Union Iron Works, Hoboken, N J
United Telpherage Co, 20-22 Broad st, N Y

Hoists (Electric).
Hunt, C W, Co, Richmond Terrace, WN Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg. Co, 96 Liberty st, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Rawson & Morrison Mfg Co, Cambridgeport, Mass
United Telpherage Co, 20-22 Broad st, New York

Hoists (Pneumatic).
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 1212-17 Herman bldg, Milwaukee

Hooks (Hoist, Grab, etc.)
Baker, Jas. H, Mfg Co, 503 Park bldg, Pittsburg
Roebling's, John A. Sons Co, Trenton, N J

Hose (Metal).
Moore Chas. C, & Co, 32 First st, San Francisco

Hose (Rubber).
McKiernan Drill Co, 170 Liberty st, N Y

Hose (Suction).
Edson Mfg Co, 255 Atlantic ave, Boston

Hydrants and Valves.
Bourbon Copper & Brass Works, Cincinnati, O
Cayuta Wheel & Foundry Co. Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Clow, J B & Sons, Lake & Franklin sts. Chicago
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Drummond, M J, & Co, 192 Broadway, N Y
Fox, John & Co, 253 Broadway, N Y
Kennedy Valve Mfg Co, 50 Beekman st, N Y
Loetzer Valve & Mfg Co, Towanda, Pa
Ludlow Valve Mfg Co, Troy, N Y
McLean, John, 298 Monroe st, New York
Millar, Chas. & Son, Co, Utica, N Y
Norwood Engineering Co, Florence, Mass
Reading Foundry Co, Ltd, Reading, Pa
Ross Valve Co, Troy, N Y
Smith, A P, Mfg Co, Newark, N J
Thompson, J, & Co, Philadelphia, Pa
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Jacks.
Watson-Stillman Co 210 E. 43d st, New York

Hydraulic Leather Packing.
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit

Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co, 134 Main st, San Francisco
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Presses.
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D. & Co, 400 Chestnut st, Philadelphia

Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco

Ice and Refrigerating Machinery.
Featherstone Fdy & Mach Co. 348 N Halsted, Chicago

Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass
Robertson, Jas L. & Sons, 192 Fulton st, N Y

Injectors.
Hayden & Derby Mfg Co, 85 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio

Instruments (Engineering, Drafting).
Ainsworth, Wm, & Sons, Denver Colorado
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Alteneder, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 57 Adams st, Toledo, Ohio
Berger, C L, & Sons, 37 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 814 Gates ave, Brooklyn, NY
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J P Station, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Barclay st, New York
Heller & Brightly Spring Garden st & Ridge av, Phila
Hetterschied Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G, 302 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco
Mahn & Co. 300-302 Olive st, St. Louis
Pfister, Herm, 428 Plum st, Cincinnati, O
Prince, L M, 108 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 429 Montgomery st, San Francisco
Schwencke, Kirk & Co, 26 Church st, New York
Soltmann, E G, 123 E 42d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Steckenreiter Mfg Co, Chicago, Ill
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, P & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 7th st, Philadelphia

Insulating Materials.
Standard Paint Co, 103 William st, New York

Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co, Springfield, O
Schrieber, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co, Cincinnati, O

Iron Work (Structural).
(see Structural Steel and Iron Work.)

Jacks
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y

Labor (Italian).
Greco, Jas, 106 Bayard st, New York
Italo-American Trust Co, 725 Carpenter st, Phila
Yuzzolino, N, 73 Mulberry st, New York

Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa

Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Lathing (Metallic).
Berger Mfg Co, Canton, O
General Fireproofing Co, Youngstown, O
(see also Fireproofing.)

Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York

Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J

Light (Contractors').
Kitson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co, Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York

Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa

Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K Co, Pittsburg, Pa.

Locomotives (Contractors').
Avery, C F, 114 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st, New York
Patton & Co, J. R., House bldg, Pittsburg, Pa
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg

Locomotive Headlights.
(see Headlights, Locomotives.)

Locomotives (Second hand).
(See Railway Equipment, Dealers.)

Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J

Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 13 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va
(see also Creosoting)

Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York

Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Chicago House Wreck Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co, 1531 Monadnock blk Chicago
Contractors' Plant Depot, 29 William st, New York
Donaldson & Newton, 421 Chestnut st, Philadelphia
Driscoll, J. T., McCormick bldg, Chicago
Efros Co, Chas, Bayonne, N J
Everson & Co, E W, Roxbury Crossing, Mass
Fitz-Hugh Co, Monadnock block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Low, Edgar S. Co, Empire bldg, Pittsburg
Patton & Co, J. R, House bldg, Pittsburg, Pa
Pease Car & Loco Works, 2-7 Dearborn st, Chicago
Saxton, J C, 18 Broadway, New York
Troy Public Works Co, 1 Mann bldg, Utica, N Y
Ulman, Jacob, 44 Lloyd st, Buffalo, N Y
Whitney, O R, 39 Cortlandt st, New York
Young, E R, & Sons, Titusville, Pa

Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York

Mail Chutes.
Cutler Mfg Co, Rochester, N Y

Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)

Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill

Measuring Tapes. (Steel).
Chicago Steel Tape Co, 508 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 86 Crescent st, Athol, Mass

Merchandise Checks.
Am. Ry Supply Co, 24 Park Place, New York

Mechanical Draft.
American Blower Co, Detroit
Buffalo Forge Co, Buffalo, N Y
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)

Metal Hose (See Hose, Metal).

Meters (Current).
Berger, C L, & Sons, 9 Province st, Boston, Mass

Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Meters (Gas).
Pittsburg Meter Co East Pittsburg, Pa

Meters (Water).
Buffalo Meter Co, 363 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 79 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y

Mining Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 95 Liberty st N Y
Blanton, E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S. Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg. Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, C T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington

Motors (Electric). (see Dynamos.)

Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York

Nut Locks.
National Elastic Nut Co, Milwaukee, Wis

Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal

Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Oil Mill Machinery.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Oil Pumps.
Sterrett Pump Co, 69 E 6th st, St. Paul

Oilless Bearings.
No Am Metaline Co, 6 West ave, Long Island City, N Y

Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)

Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detroit
Robertson, Jas L, & Sons, 192 Fulton st, New York

Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co, Walter, Cincinnati, O

Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls N Y

Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Chilton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Goheen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
Michigan Paint Co, 65 Woodland ave, Cleveland, O
National Paint Works, Williamsport, Pa
Rinald Bros, 1142 N Hancock st, Philadelphia
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 103 William st, New York
Toch Bros, New York

Paint (Cold Water).
Bird & Co, J A & W, 10 Well st, Boston

Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y

Patterns (Wood).
Balkwill Pattern Works, 970 Hamilton st, Cleveland

Pattern Letters.
Butler, A G, 284 Pearl st, New York

Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston

Paving Blocks (Stone).
Leopold, J, & Co, 18 Broadway, New York
(See also Stone.)

Paving Brick (see Brick).

Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill

Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Mundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill

Pile Hammers.
Vulcan Iron Works, Chicago, Ill

Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Meredith, J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, T W, 360 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa

Pipe (Culvert). See Pipe, Vitrified Clay.

Pipe (Lead).
Millar, Chas, & Son Co, Utica, N Y

Pipe (Riveted Steel).
Carroll-Porter Boiler & Tank Co, Pittsburg, Pa
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Weigele Riveted Steel Pipe Works, Denver, Colo

Pipe (Spiral Riveted).
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago

Pipe (Vitrified Clay).
American Sewer Pipe Co, Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Bros & Co, Akron, O
Syracuse Stoneware Co, Syracuse, N Y

Pipe (Wooden).
American District Steam Co, Lockport, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co, Los Angeles

Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York

Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y

Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila, Pa
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Jointers.
Watkins, Thos, Johnstown, Pa

Pipe Laying (Submarine).
Falcon, Jos G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Low Wrecking & Diving Co, 2 Coenties Slip, N Y

Pipe Line Supplies.
Ogden, J Edward Co, 147 Cedar st, New York

ADVERTISERS' CLASSIFIED DIRECTORY.

Pipe Tapping Machines (see Tapping Machines).

Plaster.
Rock Plaster Co, 11 Broadway, N Y

Plows (see Scrapers and Plows).

Plumbers' Supplies.
Campbell, J G, Brass Works, Cascade st, Erie, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Millar, Chas, & Son Co, Utica, N Y

Pneumatic Tools.
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Columbus Pneumatic Tool Co, Columbus, Ohio
Helwig Mfg Co, St Paul, Minn
Philadelphia Pneumatic Tool Co, Philadelphia
Slocomb, F F, & Co, Wilmington, Del
(see also Riveting Machines)

Poles (Wooden)
(see Piling.)

Portable Light (see Light, Contractors').

Portable Tracks.
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Power Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Power Transmission (Electric).
General Electric Co, Schenectady, N Y
Leffel, Jas, & Co, Springfield, O
Pelton Water Wheel Co, 134 Main st, San Francisco
Westinghouse Electric & Mfg Co, Pittsburg

Power Transmission (Rope).
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Case Mfg Co, Columbus, O
Cresson, Geo V, Co, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Phila

Press (Artificial Stone).
Palmer, Noyes F, 150 Snediker ave Brooklyn, N Y

Pressure Gages (Recording)
Bristol Co, Waterbury, Conn

Pressure Regulators
d'Est , Julian, Co, 15 Canal st, Boston
Foster Engineering Co, Newark, N J
Union Water Meter Co, Worcester, Mass

Pulleys.
Case Mfg Co, Columbus, O
Dodge Mfg Co, Mishawaka, Indiana

Pulverizers (Ore and Cement).
Allis-Chalmers Co, Home Ins bldg, Chicago
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark J C, Box 525, Atlanta, Ga
Cresson, Geo V, Co, Philadelphia
Kent Mill Co, 170 Broadway, New York
Newell Mfg Co, 149 Broadway, New York
Smidth, F L & Co, 66 Maiden lane, New York
West Pulverizing Machine Co, Jersey City, N J

Pumps and Pumping Machinery.
Allis-Chalmer Co, Home Ins bldg, Chicago
American Well Works, Aurora, Ill
Barr Pumping Engine Co, Philadelphia
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Bonnot Co, Canton, Ohio
Cameron, A S, Steam Pump Works, New York
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Cook Well Co, St Louis
d'Auria Pumping Engine Co, 941 Drexel bldg, Phila
Davidson, M T, 53 Keap st, Brooklyn, N Y
Dean Bros' Steam Pump Works, Indianapolis, Ind
Deane Steam Pump Co, Holyoke, Mass
Deming Co, Salem, Ohio
Downie Pump Co, Downieville, Pa
Edwards, Jos, & Co, 414 Water st, New York
Epping-Carpenter Co, Pittsburg
Fairbanks, Morse & Co, Chicago
Flint & Walling Mfg Co, Kendallville, Ind
Goulds Mfg Co, Seneca Falls N Y
Guild & Garrison, Sc 10th st, Brooklyn, N Y
Hill Machine Co, Anderson, Ind
Heisler Pumping Engine Co, Erie, Pa
Knowles Steam Pump Works, 81 Liberty st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati, O
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
McGowan, John H, Co, Cincinnati, Ohio
Norwalk Iron Works Co, South Norwalk, Conn
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Quimby, Wm E, 141 Broadway, N Y
Roots, P H & F M, Co, Connersville, Ind
Scranton Steam Pump Co, 151 Franklin ave, Scranton
Snow Steam Pump Works, 120 Liberty st, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio
U S Wind Engine & Pump Co, Batavia, Ill
Wood, P K, 209 No Main st, Los Angeles, Cal
Wood, R D, & Co, Philadelphia
Worthington, Henry R, Brooklyn, N Y

Pumps (Air Lift).
Bacon Air Lift Co, 150 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
Pneumatic Engineering Co, 128 Broadway, N Y

Pumps (Artesian Well).
Davidson, M T, 141 Broadway, New York
Downie Pump Co, Downieville, Pa
Wood, P K, 209 No Main st, Los Angeles, Cal

Pumps (Centrifugal).
Baldwinsville (N Y) Centrifugal Pump Works
Bucyrus Co, South Milwaukee, Wis
Edwards, Jos, & Co, 414 Water st, New York
Erie Pump & Engine Co, Erie, Pa
Kingsford Foundry & Machine Works, Oswego, N Y
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
Morris Machine Works, Baldwinsville, N Y
Temple Pump Co, 13th Place, Chicago
Wood, R D, & Co, Philadelphia

Pumps (Diaphragm).
Boston & Lockport Block Co, 180 Commercial st, Boston
Edson Mfg Co, 255 Atlantic ave, Boston

Pumps (Electric).
Davidson, M T, 141 Broadway, New York
Deming Co, Salem, Ohio
Goulds Mfg Co, Seneca Falls, N Y
Quimby, Wm. E, 141 Broadway, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Pumps (House Service).
Quimby, Wm E, 141 Broadway, New York

Pumps (Mining)
Davidson, M T, 141 Broadway, New York
Goulds Mfg Co, Seneca Falls, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Snow Steam Pump Works, 120 Liberty st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, P K, 209 No Main st, Los Angeles, Cal

Punching Tools.
Pels & Co, Henry, 66-68 Broad st, New York

Pyrometers.
Bristol Co, Waterbury, Conn

Quarrying Machinery.
Flory, S, Mfg Co, Bangor, Pa
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, New York
Rand Drill Co, 128 Broadway, New York
Sullivan Machinery Co, 135 Adams st, Chicago
Tyrone Foundry & Machine Co, Tyrone, Pa

Rack Railways.
Hildenbrand, Wm, 1 Broadway, New York

Rail Fastenings.
Continuous Rail Joint Co of America, Newark, N J
National Elastic Nut Co, Milwaukee
N Y Rail Insulation & Equip Co, 200 Market st, Newark
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rail Joints.
Bonzano Rail Joint Co, 22 South 15th st, Philadelphia
Continuous Rail Joint Co of America, Newark, N J
McConway & Torley Co, Pittsburg, Pa
Weber Ry Joint Mfg Co Cotton Exch bldg, N Y

Rails (Relaying).
Donaldson & Newton, 421 Chestnut st, Philadelphia
Grant & Harper Machy Co, Park Row bldg, New York
Hyde Bros, 102 Lewis bldg, Pittsburg
Johnson, Chas F, 208 Ellicott square, Buffalo
Robinson & Orr, 419 Wood st, Pittsburg
Tallon, C J, 308 Market st, San Francisco

Rails (Steel).
Baumgarten & Bro, A F, Pittsburg, Pa
Buffalo Steel Co, Tonawanda, N Y
General Supply & Const'n Co, 8-10 Bridge st, N Y
Koppel, Arthur, 68 Broad st, New York
Pennsylvania Steel Co, Steelton, Pa

Railway Equipment (Dealers).
Apex Equipment Co, 11 Broadway, New York
Fitz-Hugh & Co, Monadnock bldg, Chicago
Low, Edgar S, Co, Empire bldg, Pittsburg
Males Co, Ætna bldg, Cincinnati
Pease Car & Loco Works, 277 Dearborn st, Chicago
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Watson, Benjamin, 66 Beaver st, New York

Railway Signals (Pneumatic)
Pneumatic Signal Co, Broad-Exchange bldg, N Y

Railway Ties.
American Creosote Works, Ltd, New Orleans La
New Orleans Wood Preserving Works, New Orleans
Vanderbilt & Hopkins, 126 Liberty st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Railway Track Specialties.
Diamond State Steel Co, Wilmington, De
N Y Switch & Crossing Co, Hoboken, N J
Railroad Supply Co, Bedford bldg, Chicago
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Railways (Industrial).
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Riveting Machines.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Allen, John F, 70 Gerard ave, New York
General Pneumatic Tool Co, Montour Falls, N Y
Manning, Maxwell & Moore, 85 Liberty st, New York
Rand Drill Co, 128 Broadway, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia Pa
(see also Pneumatic Tools.)

Road Rollers and Machinery.
Acme Road Machinery Co, Frankfort, N Y
Austin Mfg Co, F C, Harvey, Ill
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Erie Machine Shops, Erie, Pa
Goods Roads Machinery Co, Kennett Square, Pa
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Heisler, Chas L, Erie, Pa
Huber Mfg Co, Marion, Ohio
Iroquois Iron Works, 178 Walden ave, Buffalo, N Y
Kelly-Springfield Road Roller Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich
Scholl, Julian, & Co, 126 Liberty st, New York
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Rock and Ore Crushers.
Acme Road Machinery Co, Frankfort, N Y
Allis-Chalmers Co Home Ins bldg, Chicago
Austin Mfg Co, F C, Harvey, Ill
Aultman Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Climax Road Machine Co, Marathon, N Y
Cresson Co, Geo V, Philadelphia
Farrel Foundry & Machine Co, 26 Cortlandt st, N Y
Good Roads Machinery Co, Kennett Square, Pa
Scholl, Julian, & Co, 126 Liberty st, New York
Smidth, F L & Co, 66 Maiden lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Tyrone Foundry & Machine Co, Tyrone, Pa
Western Wheeled Scraper Co, Aurora, Ill

Rock Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Davis Calyx Drill Co, 128 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
McKiernan Drill Co, 170 Liberty st, N Y
Rand Drill Co, 128 Broadway, New York
Rogers, John M, Gloucester City, N J
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Wood Drill Works, 30 Dale ave, Paterson, N J

Rolling Doors, Partitions, etc. (Steel)
Kinnear Mfg Co, Columbus, Ohio
Wilson, J G, 3 W 29th St, New York

Roofing.
Standard Paint Co, 100 William st, New York

Roofing (Corrugated).
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Scaife, W B, & Sons Co, Pittsburg

Rope (Manila).
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Smith, S Morgan, Co, York, Pa

Scales (Weighing).
Fairbanks, Morse & Co, Chicago
Richardson Scale Co, 12 Park Row, New York

Schools (Correspondence).
Am. School at Armour Inst of Tech, Chicago
Penn. Corres. Schools, Hamilton bldg, Pittsburg
(For Directory of Engineering Schools see p. 4.)

Scrapers and Plows.
Austin Mfg Co, Manhattan bldg, Chicago
Contractors' Plant Mfg Co, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Shuart Scraper Co, Oberlin, O
Smith & Sons Mfg Co, Kansas City, Mo
Syracuse Chilled Plow Co, Syracuse, N Y
Western Wheeled Scraper Co, Aurora, Ill

Screens (Stone and Sand).
Allis-Chalmers Co, Home Ins bldg, Chicago
Aultman Co, Canton, O
Climax Road Machine Co, Marathon, N Y
Harrington & King Perforating Co, Chicago, Ill
Taylor Iron & Steel Co, High Bridge, N J

Screens (Water-Works).
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Seamless Drawn Tanks and Tubes.
National Tube Co, Pittsburg

Separators (Oil and Steam).
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Robertson, Jas L, & Sons, 192 Fulton st, New York

Sewage Disposal.
Cameron Septic Tank Co Monadnock block, Chicago

Sewer Braces.
Dunn Mfg Co, Pittsburg, Pa
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind

Sewer and Street Castings.
Permanent Mfg Co, Am Trust Bldg, Cleveland, O
Sessions Foundry Co, Bristol, Conn
(see also Castings, Iron.)

Sewer Pipe (see Pipe, Vitrified)

Shafting.
Case Mfg Co, Columbus, O
Cresson, Geo V, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Poole, Robt, & Son Co, Baltimore, Md

Sheet Iron Work.
Am Sheet Steel Co, Battery Park bldg, New York
Petroleum Iron Works Co, Washington, Pa
Scaife, Wm B, & Sons Co, Pittsburg

Sheet Steel.
Am Sheet Steel Co, Battery Park bldg, New York
American Steel & Wire Co, New York & Chicago

Shutters (Fire Proof).
Kinnear Mfg Co, Columbus, Ohio

Skylights.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J
Vaile & Young, Baltimore, Md

Sluice Gates.
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Smoke Stacks (see Stand-Pipes and Tanks).

Speed Governors.
Foster Engineering Co, Newark, N J

Stamp Mills.
Allis-Chalmers Co, Home Ins bldg, Chicago

Stand-Pipes and Tanks.
Caldwell, W E, Co, 200 East Main st, Louisville, Ky
Chicago Bridge & Iron Co, Chicago
Columbiana Boiler Co, Columbiana, O
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Co, East Boston, Mass
Keeler, E, Co, Williamsport, Pa
King Bridge Co, Cleveland, O
Means & Fulton Iron Works, Birmingham, Ala
Meehan Boiler & Construction Co, Lowellville, O
North Penn Iron Co, 3d and Sedgley ave, Phila
Petroleum Iron Works Co, Washington, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg
Sharon Boiler Works, Sharon, Pa
Smith, Thos, & Sons Co, Jersey City, N J
Snow, T W, 360 Dearborn st, Chicago
Strutzers-Wells Co, Warren, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Tippett & Wood, Phillipsburg, N J
U S Wind Engine & Pump Co, Batavia, Ill
Walsh, W J, Holyoke, Mass
Warren City Tank & Boiler Works, Warren, O
Wood, R D & Co, Philadelphia, Pa

Steam Shovels.
Austin, Mfg Co, Manhattan bldg, Chicago
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Marion Steam Shovel Co, Marion, O
Mead, John A, & Co, 7 Broadway, New York
Osgood Dredge Co, Albany, N Y
Soutber, John, & Co, Boston, Mass
Thew Automatic Shovel Co, Lorain, O
Toledo Foundry & Machine Co, Toledo, O
Vulcan Iron Works Co, Toledo

Steam Specialties.
American District Steam Co, Lockport, N Y
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
d'Est, Julian, Co, 15 Canal st, Boston
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Lunkenheimer Co, Cincinnati, O
Manning, Maxwell & Moore, 85 Liberty st, New York
Robertson, Jas L, & Sons, 192 Fulton st, New York
Union Steam Spec. Co, 151 Franklin ave, Scranton, Pa
(see also Separators, Oil and Steam.)

Steam Traps.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Crane Co, Chicago, Ill
d'Est, Julian, Co, 15 Canal st, Boston
Sturtevant, B F, Co, Boston, Mass

Steel Clips.
Streeter, H A 35 Indiana st, Chicago

Steel Flanges (Weldless).
Latrobe Steel Co, Girard bldg, Philadelphia

Steel Ties.
Koppel, Arthur, 68 Broad st, New York

Stone.
Bound Brook (N J) Crushed Stone Co
Leopold, J, & Co, 18 Broadway, New York
Thiel, August, Guttenberg, N J
Tomkins, Calvin, 120 Liberty st, New York

Street Railway Supplies.
Brill, J G, Co, Philadelphia, Pa

Street Sprinklers and Sweepers
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Edson Mfg Co, 255 Atlantic ave, Boston
Good Roads Machinery Co Kennett Square, Pa

Structural Steel and Iron Work.
Berlin Construction Co, Berlin, Conn
Brooks, T H, & Co, Cleveland, O
Eichleay, John, Jr, Co, Pittsburg
General Supply & Const'n Co, 8-10 Bridge st, N Y
Kratzer, W N, & Co, 3218 Smallman st, Pittsburg
Link Belt Engineering Co, Nicetown, Phila
Means & Fulton Iron Works, Birmingham, Ala
National Skylight & Const'n Co, 120 Liberty st, N Y
N J Foundry & Machine Co, 9 Murray st, N Y
North Penn Iron Co, 3d and Sedgley ave, Phila
Pedrick, E K, Co, 120 Liberty st, New York
Schreiber, L, & Sons Co, Cincinnati, O
Sharon Boiler Works, Sharon, Pa
Snare & Triest, 39 Cortlandt st, New York
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Streeter, H A, 35 Indiana st, Chicago
Tippett & Wood, Phillipsburg, N J
Walton Iron Co, Cincinnati
(see also Bridges and Buildings.)

Stump Pulling Machine.
Milne Mfg Co, 304 Eighth st, Monmouth, Ill

Submarine Armor (see Diving Apparatus).

Tacks, Thumb
Albrecht, C. R, 62 Fulton st, New York

Tanks.
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Hodge Boiler Works, East Boston, Mass
Pacific Tank Co, Los Angeles, Cal.
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, W B, & Sons, Pittsburg
Steel Storage Elevator & Const'n Co, Buffalo, N Y
Warren City Tank & Boiler Works, Warren, O
(see also Stand Pipes and Tanks.)

Tapes (Steel). See Measuring Tapes.

Tapping Machines (Pipe).
Smith, Anthony P, Mfg Co, Newark, N J

Tents.
Murray & Co, 329 S Canal st, Chicago

Test Borings (see Artesian Wells).

Testing Laboratories (see Laboratories).

Testing Machines.
Falkenau-Sinclair Machine Co, 109 N 22 st, Phila
Riehle Bros Test & Mach Co, 1424 N 9th st, Phila

Thermometers (Recording).
Bristol Co Waterbury, Conn

Tie Plates.
Diamond State Steel Co, Wilmington, Del
Railroad Supply Co, Bedford bldg, Chicago

Ties
Koppel, Arthur, 68 Broad st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Time and Cost Keeping.
Industrial Time & Cost Keep. System, Bantam, Conn

Time Detectors.
Am Watchmen's Time Detector Co, 234 B'way, N Y
Imhauser, E, & Co, 206 Broadway, New York

Tracing Cloth.
Aloe, A S, Co, 414 North Broadway, St Louis
Favor, Ruhl & Co, 54 Park Place, N Y
Hardtmuth, L & C, 49 Barclay st, New York
(see also Instruments, Engineering, etc.)

Transformers.
General Electric Co, Schenectady, N Y

Trench Machines.
Carson Trench Machine Co, Boston, Mass
Potter Mfg Co, 2010 N W ave Indianapolis, Ind

Tubing (Flexible Metallic).
Moore, Chas C, & Co, 82 First st, San Francisco

Turbines.
Camden Water-Wheel Wks, Camden, New York
Dayton Globe Iron Works Co, 7 Ludlow st, Dayton, O
Leffel, Jas, & Co, Springfield, O
Poole, Robert, & Son Co, Baltimore, Md
Risdon-Alcott Turbine Co, Mt Holly, N J
Smith, S Morgan Co, York, Pa
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, R D, & Co, Philadelphia, Pa

Turnbuckles.
Cleveland City Forge & Iron Co, Cleveland
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Turntables.
American Bridge Co, New York
Boston Bridge Works, 47 Winter st, Boston, Mass
Chicago Bridge & Iron Co, Chicago
Columbia Bridge Co, Pittsburg
Fort Pitt Bridge Works, Pittsburg, Pa
Hunt, C W, Co, Richm'd Terrace, W N Brighton, N Y
King Bridge Co, Cleveland, O
Koppel, Arthur, 68 Broad st, New York
McClintic-Marshall Construction Co, Pottstown, Pa
Mo Valley Bridge & Iron Wks, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, O
Passaic Steel Co, Paterson, N J
Philadelphia Bridge Works, Pottstown, Pa
Phoenix Bridge Co, 1321 Arch st, Philadelphia
Virginia Bridge & Iron Co, Roanoke, Va
Wonham-Magor Eng. Wks, 29 Broadway, New York

Valve Boxes.
Cayuta Wheel & Foundry Co, Sayre, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Drummond, M J, & Co, 192 Broadway, N Y

Valves.
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Darling Pump & Mfg Co, Box E, Williamsport, Pa
(see also Hydrants and Valves.)

Valves (Gas).
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Ludlow Valve Mfg Co, Troy, N Y
Roots, P H & F M, Co, Connersville, Ind

Valves (Gate).
Cayuta Wheel & Foundry Co, Sayre, Pa
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Crane Co, Chicago, Ill
Millar, Chas, & Son Co, Utica, N Y
Walworth Mfg Co, Boston, Mass
Wood, R D, & Co, Philadelphia, Pa

Valves (Pressure Regulating).
Ross Valve Co, Troy, N Y
(see also Pressure Regulators.)

Valves (Steam).
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Ludlow Valve Mfg Co, Troy, N Y
Lukenheimer Co, Cincinnati, O

Valves (Stop).
Foster Engineering Co, Newark, N J
Reading Foundry Co, Ltd, Reading, Pa
Thompson, J, & Co, Philadelphia

Varnish and Colors.
(see Paints.)

Vault Lights.
Brooks, T H, Cleveland, Ohio
Tucker & Vinton, 156 Fifth ave, New York

Ventilators.
Buffalo Forge Co, Buffalo, N Y
Merchant & Co, Inc, Philadelphia, Pa

Vises (Parallel).
Merrill Bros, 467 Kent ave, Brooklyn

Wagons and Carts.
Auburn Wagon Co, Martinsburg, W. Va
Austin, F C, Mfg Co, Harvey, Ill
Climax Road Machine Co, Marathon, N Y
Columbia Wagon Co., Columbia, Pa
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
U S Sanitary Co, Washington, D C
Watson Wagon Co, Canastota, N Y
Western Wheeled Scraper Co, Aurora, Ill

Water Motors.
Backus Water Motor Co, Newark, N J

Water Softening Plants.
Industrial Water Co, 126 Liberty st, New York
Kennicott Water Soft Co, 406 Great North. bldg, Chic
N Y Continental Jewell Filtration Co, 15 Broad st, N Y
Patterson, D W, Harrison bldg, Philadelphia, Pa
Pittsburg Filter Mfg Co, Pittsburg

Water Storage Systems.
Acme Water Stor & Const'n Co, Park Row bldg, N Y

Water Wheel Governors.
(see Governors, Water-Wheel.)

Water Wheels.
Cassel Auto Water Motor Co, Seattle, Wash
Doble, Abner, Co, Fremont & Howard, San Francisco
Pelton Water Wheel Co, 134 Main st, San Francisco
(see also Turbines.)

Water-Works Tools and Supplies.
Flint & Walling Mfg Co, Kendallville, Ind
Smith, A P, Mfg Co, Newark, N J

Well Drilling Machinery.
American Well Works, Aurora, Ill
Cook Well Co, St Louis, Mo
Star Drilling Machine Co, 104 Fulton st, New York
Williams Bros, Ithaca, N Y

Wharf and Pier Builders.
Atlantic, Gulf & Pacific Co, 13-21 Park Row, N Y
McMullen, Arthur, & Co, 13-21 Park Row, New York
O'Rourke, John F, Park Row bldg, N Y
Phoenix Bridge Co, Phoenixville, Pa
San Francisco Bridge Co, 230 Market st, San Francisco

Wheelbarrows.
Cockburn Barrow & Machine Co, Jersey City, N J
Syracuse Chilled Plow Co, Syracuse, N Y
Steubner, G L, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill

Whistles.
Crosby Steam Gage & Valve Co, Boston
Lunkenheimer Co, Cincinnati, O

Windmills.
Flint & Walling Mfg Co, Kendallville, Ind
Temple Pump Co, 13th Place, Chicago
U S Wind Engine & Pump Co, Batavia, Ill

Wire, Wire Rope and Cables.
American Steel & Wire Co, New York & Chicago
Broderick & Bascom Rope Co, St Louis
Leschen, A, & Sons Rope Co, St Louis
Macomber & Whyte Rope Co, 21 S Canal st, Chicago
Roebling's, John A, Sons Co, Trenton, N J
Trenton Iron Co, Trenton, N J
Williamsport Wire Rope Co, Williamsport, Pa

Wire Drawing Machinery.
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Worm Gearing.
Morse, Williams & Co, Philadelphia, Pa

Wire Fence (see Fencing).

Wood Preserving (see Creosoting).

Wrenches.
Keystone Drop Forge Wks, 20th & Clearfield sts, Phila

TURN TO PAGES XXIV-V

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